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LEAFLETS

OF

PHILIPPINE BOTANY

Edited by A. D. E. ELMER, A. M.

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LEAFLETS OF PHILIPPINE BOTANY

EDITED BY A. D. E. ELMER, A. M.

Vol. VII. Manila, P. I., August 1, 1914. Art. 109.

NEW SYMPLOCOS FROM MINDANAO

by

A. D. E. Elmer

Symplocos apoensis Elm. n. sp.

Tree of small size; twigs terete, glabrous. Leaves alternatingly scattered along the branchlets, horizontally spreading, flat or the abruptly acute to acuminate apex recurved, base broadly obtuse or subcuneate, glabrous, curing dull green on both sides, edges entire, the larger blades 12.5 cm long by 7 cm wide, obovate to subelliptic or obovately oblong, frequently only one half as large; midvein stoutly ridged beneath, plainly channelled along the upper side, dark brown in the dry state; lateral pairs 6 to 9, oblique, coarsely branched and faintly united toward their ends, cross bars and reticulations likewise coarse and faint; petiole glabrous, 1 cm long, grooved along the upper side. Flowers not seen. Infrutescence terminal or from the uppermost leaf axils, from a few to 10 cm long, puberulent, few branched from above the middle; pedicels finely pubescent, 5 mm long, scattered along the branchlets, the basal portion thickened; fruit less than 1 cm long, 6 mm thick below the middle, ovoidly globose, green when fresh, russet brown in the dry state, irregularly rugose when dry, with the 5 dentate calyx teeth persistent and finely ciliate along the edges.

Type specimen number 11961, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, October, 1909.

Only one small tree was found in humid forests at 4250 feet altitude on the Talon side of the mountain after which it is named. "Bolabogon" is the Bagobo name.

My number 14073 from mount Urdaneta is nearer related to *Symplocos floridissima serrata Brand* than is the new species here proposed.

Symplocos minutiflora Elm. n. sp.

Small though erect tree; stem 1 dm thick, 5 m high or higher, terete, somewhat crooked, branched from the middle; main branches erect, ultimately numerously rebranched; wood soft, sappy white; bark greenish except the smooth brown surface; twigs lax, ascending, terete, reddish brown, relatively short, straight and puberulent at the young apical portion, quite numerous. Bud bracts less than 5 mm in length, strongly imbricate and twisted, glabrous above, appressed pubescent on the outer side, acuminately pointed; leaves numerous alternate, similarly disposed as the branchlets, subcoriaceous, conduplicate and with the acuminate apex recurved, base obtuse or subacute, entire, smooth on the upper side, subequally green on both sides, curing yellowish green especially the younger ones, the average ones 8 cm long and 2.5 cm wide at the middle, oblongish or the smaller ones broadly lanceolate; petiole 3 to 5 mm long, yellowish green, glabrous, caniculate along the upper side; midvein glabrous, yellow in the dry state, ridged beneath, sunken along the upper side; lateral nerves faint, 5 to 7 pairs, the basal ones oblique, the others subdivaricate, sparingly branched, their ends archingly united 4 mm below the edge, reticulations coarse and obscure. Inflorescent spikes greenish, ascending, solitary or in pairs, lateral and from the leaf axils, puberulent, 1.5 to 2 cm long, angular especially toward the distal end, unbranched; flowers minute, caducous, odorless, alternatingly scattered but more crowded toward apex, leaving scars after falling; pedicel with an involucral 3-bracteate 1.5 mm long cup, thick, minutely puberulent, subtended by a stout blunt bract; the involucral segments broadly triangular, finely ciliate along the edges, persistent; calyx elongated, cup shaped, 1.75 mm long, 1.25 mm wide above the middle, the basal two thirds concrete with the ovary and subglabrous, the upper one third 5-segmented; sepals yellowish green, 0.5 mm long, wider, broadly rounded and finely ciliate along the margins; corolla segments 5, caducous, 2 mm long or longer, oblong, puberulent on the outer side, similar in color or white; stamens also white, two to three times as many, inserted upon the base of the corolla and falling with them; filaments glabrous, 1 to 2 mm long or longer; anthers brown in the dry state, yellowish when fresh, less than 0.33 mm across, orbicular, with notched bases, dehiscing laterally; ovary imbedded, apex truncate; style 3 mm long, subglabrous or puberulent, thinnest across the middle, terminated by a darker brown, green in the fresh state, capitate stigma.

Type specimen number 14121, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

In stony soil of a steep wooded slope of Cawilanan peak at 4250 feet altitude. "Magotingdacol" in Manobo.

Not *Symplocos fragans Elm.* nor *Symplocos curtiflora Elm.*, yet not so definite from the latter because the type is in fruit only. Certainly not *Symplocos depauperata Merr.* nor *Symplocos luzonensis Vid.* The Benguet species by *Merrill* is furfurascent on the twigs and had a dwarfed or depauperate appearance. Can *Brands'* mount Banahao *Symplocos merrillii* be the same as *Vidal's* species?

Symplocos agusanensis Elm. n. sp.

A small erect tree; stem 1 dm thick, terete, 5 m high, branched from the middle; wood rather soft, sappy white, slightly bitter, ordorless; bark smooth, gray and brown mottled, the inner side of the same color as the wood, the middle portion greenish; main branches divaricate, laxly rebranched; twigs terete, brown, the young glabrate apical portion only subterete. Bud bract 6 mm long, subglabrous or appressed hairy on the dorsal side, acuminately pointed, the sides strongly imbricate; leaves alternatingly scattered toward the ends of the branchlets, not numerous, horizontal, the acute to acuminate tips recurved, very smooth and glabrate on both sides, papyraceous, curing green though duller green on the nether side, upper surface dark green in the fresh state, entire, acute to obtuse at base, its blade oblong to subelliptic, the average 8 cm long by 3.25 cm wide across the middle; petiole yellowish when dry, glabrous and deeply caniculate along the upper side, appressed hairy on the lower or basal portion but with age becoming glabrous, 5 to 8 mm long; midvein also yellowish and ridged beneath, glabrous, distinctly channelled along the upper side; lateral nerves 5 to 7 pairs, faint, the basal pair oblique, the others subdivaricate, very sparingly branched, their ends archingly united 3 to 5 mm from the margin, reticulations obscure. Spikes lateral among the foliage, occasionally in their axils, ascending, horizontal or descending, usually solitary, varying from 5 to 15 mm in length, more or less angular or subterete, appressed pubescent, persistent, unbranched, yellowish green; flowers cremeus, alternatingly scattered along the rachis from near the base, odorless, caducous; pedicel with the 3 cupular bracts less than 2 mm long, subglabrous, the margins of the acute bracts finely ciliate, comparatively thick; calyx campanulate, 1.5 mm long, nearly as wide across the top, the two thirds concretely surrounding the ovary, the distal portion composed of 5 short and broad persisting segments, glabrous or the margins of the sepals very finely ciliate, cremeus or more distinctly yellow; corolla falling as a whole, spatulately oblong or broadly linear, deep cremeus, at the base subcallous and more or less united, apex rounded, 1 by 3 mm, glabrous, few parallel veined, when old becoming twistingly reflexed; stamens cremeus, inserted upon the base of the corolla and falling with it, many, spreading when in full anthesis; filaments from 1 to nearly 3 mm long, slender, glabrous or subglabrous, continguous; anther 0 33 mm across, basifixed, the base widely notched, emarginate at apex, the empty cells widely spreading; ovary imbedded, its crown obscurely conical; style 2 to 3 mm long, strict, glabrous, constricted near the base, terminated by a thickened much darker brown capitate stigma.

Type specimen number 14039, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

On a steep forested incline in the saddle between Duros and Cawilanan peaks at 3500 feet altitude. Its Manobo name is "Talipsay."

Symplocos curtiflora Elm., but leaves larger and less numerous, rachis more pubescent and with other minor characters. The leaves on number 14039 are better *Symplocos cumingiana Brand* than are those on my number 14091 collected in this same locality at a higher altitude.

Symplocos laeviramolusa Elm. n. sp.

Less than a medium sized tree; stem 3 dm thick, straight and terete, about 15 m high, branched from above the middle; wood dingy or yellowish white, rater soft, entirely odorless and tasteless; bract relatively thick, smoothish, very dark or blackish brown on the surface, otherwise wood colored; main branches divaricately spreading, crookedly rebranched; twigs rather numerous toward the ends, frequently in subwhorls, shining, glabrous even the young tips, pale green, the ultimate branches divaricately spreading, conspicuously angular and quite brittle. Bud bracts 6 mm long, glabrous, imbricate, acuminately pointed; leaves ascending, glabrous and shining green on both sides, chartaceous and easily breaking, the upper side deeper green and more lucid, drying very similar, elliptic to ovately oblong, apex abruptly acute or gradually acuminate, base broadly obtuse or obtusely rounded, the average lamina 7 cm long by one half as wide across the middle, margins obscurely denticulate except the entire basal one third; petiole 1 cm long, also glabrous, fluted above, subterete; midvein dull yellow as is also the petiole in the dry state, ridged especially toward the base and upon the lower side; lateral nerves very obscure, 5 to 8 on each side, ascending, tips more or less reticulately united, reticulations equally evident from both sides. Inflorescence erect, glabrous and green, axillary, the central spike usually branched at the base into a pair of short divaricate branchlets, the main or middle rachis 2 cm long; the rachis yellowish green, terete or angular, at first puberulent, ultimately glabrous, bearing alternating flowers from the middle or from the distal end mostly; pedicel 1 to 2 mm long, subtended by a minute bract, subglabrous, terminated by a cup shaped involucre; segments 1 mm long, usually broader, yellowish green, glabrous, their margins finely ciliate, imbricate; calyx becoming easily detached, 3 mm high and as broad across the top, campanulate, the basal one half concrete with the ovary, the upper portion segmented; sepals 5, very pale yellow, finely ciliate along the rounded apex, otherwise glabrous, 1.5 mm across; corolla composed of 5 petals, pale yellow, glabrous; elliptic petals 3.5 mm long by 1 mm narrower, finely veined; stamens many, clustered and inserted upon the base of the petals and falling with them; filaments glabrous, the longer ones 3 mm, slender, more or less united at the base; anthers whitish, broadly elliptic, lobed at base, notched at apex, 0.5 mm long, dorsifixed; ovary subglobose, with sides obscurely rugose, sparsely strigose at the truncate apex; style 3 mm long, relatively thick, glabrous, whitish, terminated by a convoluted green stigma.

Type specimen number 14123, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

A small tree in humus covered stony ground along the upper forested edge of a steep ravine on Cawilanan peak at 4250 feet altitude. Only one tree was seen and my Manobo companion called it "Bangnon."

Only distantly related to *Symplocos whitfordii Brand*, its angular and polished twigs are very characteristic.

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NEW ARALIACEAE FROM MINDANAO

by

A. D. E. Elmer

Aralia apoensis Elm. n. sp.

A small tree-like shrub; stem 1.5 dm thick, nearly 7 m high; wood soft, nearly pure white, odorless and tasteless; bark brown, very thinly checked, beset with sharp somewhat flattened spines; main branches few, ascending and with the ultimate branches forming a flattish crown; twigs suberect, greenish brown, 4 cm thick, also provided with brown sharp spines. Leaves opposite, divaricate, 1 to 1.5 m long; petiole 3 dm long, much thickened at the base; rachis strongly nodulose at the joints, reddish along the upper side; blade 3 to 5-compound, triangular in outline, the lower or larger divisions 3 dm long at least and 9 to 11-pinnate; stalks greenish or turning reddish brown, the rachilla subterete and pulverulent; larger leaflet 1 dm long and fully and half as wide, gradually becoming smaller toward the base though the terminal leaflet is only a trifle larger than the upper pair of leaflets, descending, shallowly conduplicate on the upper deep green and glabrous surface, glaucescently green beneath, submembranous, appearing more or less rugulose, nerves beneath soft tawny tomentose, the upper side turning blackish brown while drying, the nether side gray, the acute to acuminate tips recurved, base broadly rounded and entire, otherwise crenately toothed; petiole varying from 2 to 6 cm in length, usually subtended at the base by a leaflet; petiolule 2 to 5 mm long, glabrous and grooved above, otherwise yellowish brown pubescent, that of the subtending leaflet twice as long; midrib stout and brown pubescent beneath, narrowly ridged above; nerves 6 to 9 pairs, similarly pubescent beneath, occasionally with intervening secondary ones, ascending and usually curved, tips anastomosing, reticulations rather few toward the midrib. Inflorescence erect, 3 to 6 dm or even 1 m long, paniculate in outline, the lower unbranched branches 4.5 dm long, the uppermost only one third as long; stalks greenish or when exposed becoming reddish to brown, subterete, the upper one half striate and fusco-tomentulose; flower bearing portion promiscuously scattered from below the middle, solitary or in clusters, 2 to 5 cm long, similar in vestiture, 3-branched from about the middle, divaricate, subtended by glabrate bracts whose margins are finely ciliate; lateral branchlets 1 cm long, the terminal one a trifle longer; flower in rather dense globose umbels, odorless, creamy white, 5 mm or more in diameter; pedicels 1 to 3 mm long, densely brown puberulent, persistent, subtended by bracteoles; calyx subcampanulate, greenish, 1.5 mm long, nearly as thick above the middle, glabrous or subglabrous, terminated into 5 minute teeth, in the dry state more or less rugose; ovary crown subglaucous or yellowish green, terminated into a central group of normally 5 styles; styles united at the base, erect and becoming recurved, glabrous, less than 1 mm in length, terminated by a small darker colored stigma. Fruits 4 mm in diameter, subglobose, with the 5 much reflexed styles persistent; seeds 5, stone-like, 2 mm long, 1.5 mm wide, smooth and nearly glabrous, yellowish brown, sides flat.

Type specimen number 11608, *A. D. E. Elmer,* Todaya (Mt. Apo), District of Davao, Mindanao, 1909.

Collected in fertile moist soil of light woods at 3500 feet altitude. Only known from the north side of the Sibulan river and at the base of mount Calelan. "Mara-bauya" in Bagobo.

Boerlagiodendron humilis Elm. n. sp.

Strictly erect but small shrubs; stem 1 to 1.5 m high, terete, solitary or more than one from the base, 2.5 cm thick; bark yellowish, rather smooth; wood sappy white, quite hard, odorless and tasteless. Leaves chiefly at the top, divaricately spreading, alternate, not numerous; petiole terete, 15 to 25 cm long, glabrate or nearly so, base provided with peculiar stipular ring-like appendages and interaxillary bracts; blade palmately 5-lobed, about 2 dm wide, the base with a broad sinus, sinuses between the lobes rounded and relatively broad, lobes divided to within 4 to 5 cm from the base, the terminal or longer lobe 15 cm long, the basal pair one half as long, margins serrately apiculate or entire toward the base of the lobes, apex rounded, occasionally terminated by an acute point, the basal pair of lobes usually with a large tooth or lobule on its lower edge, the average lobes 5.5 cm wide above the middle; veins 5, stout, especially raised upon the upper side; nerves 5 to 8 in the lobular portion, comparatively inconspicuous, ascendingly curved, cross bars obscure. Inflorescence terminal, corymbose, 5 cm wide, subtended by a few simple foliaceous bracts; peduncle 2 to 3 cm long, very thick, more or less imbricated with brown furfuraceous oblong bracts which are usually greenish though often purplish tipped; branches umbellately spreading, 5 cm long, more or less flattened and striate, brown pulverulent, rebranched at about the middle, provided with subtending bracts; ultimate branches quite similar in vestiture and shape, subtended by smaller bracts, usually 3-clustered; pedicels 1 to 2 mm long, gradually thickened toward the distal end, at the base surrounded by a brown ciliated bract, ellipsoid, nearly 2 mm long, truncate at apex. Dry fruit 6 mm long by 4 mm thick across the middle, strongly 4-angled, smooth and glabrous, bearing the 4 contiguous roughened stigmas; seeds also 4 and as long as the fruit itself though only one half as wide, stone-like, the ventral edge nearly straight, the back curved and obscurely ridged, the two sides coarsely rugose, when ripe and fresh bright yellow and ellipsoid.

Type specimen number 10860, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, June, 1909.

Collected this small species in damp fertile ground of dense woods at 3250 feet altitude on the south side of the Baruring river. The Bagobos call it "Saranka-mano."

Either through a mixture of specimens or an error in determination, some of my material was sent out as 10860[a] under *Boerlagiodendron clementis Merr.*

Boerlagiodendron sibuyanense Elm. n. sp.

Erect tree; stem 8 cm thick, terete, 7 to 10 m high; wood soft, sweetish, dull white, with a large greenish white pith; bark smoothish, yellowish gray mottled, with scattering lenticels; the occasional branches ascending, arising from above the middle, unbranched. Leaves crowded at the terminus of the stem or at the end of the few lateral branches, alternate; the fan shaped blade coriaceous, heavy, duller green above, drying unequally dull brown, 9-lobed, the basal ones much smaller, the sinus extending down to one third of the base, 4 dm long, the longer lobes two thirds as long by 7 to 9 cm wide, very coarsely and unequally serrate, apex extended into an acuminate point, glabrous; veins as many as there are lobes, very prominent on both sides; lateral nerves 7 to 11 on each side, comparatively faint, divaricate and slightly ascending, forked toward the margins, the cross bars and few coarse reticulations obscure; petiole ascending, dark green, triangular, at the thickened base provided with 2 transverse pectinate excrescences, 1 m long. Inflorescence corymbose, terminal, usually solitary; peduncle subtended by coarse bracts and by much reduced leaves, short and thick; secondary stalks 5 to 8 cm long, subcompressed, densely scurfy brown in the early state, subtended by scurfy bracts, rebranched from above the middle; ultimate branches 3-clustered, the middle one earlier and consequently longer, all subtended by oblong densely covered with furfuraceous scales, compressed and brown scaly; head subglobose, 8 mm in diameter, in the fresh state the middle or central head was light yellow while the lateral ones were dull yellow; young fruits pyriform, 2 mm long, 1.33 mm wide across the top, sessile or with only a short pedicel, enclosed by a brown involucre, fringed with cilia along the margins and exterior, when dry nearly black, glabrous, the truncately rounded top with 4 inwardly appressed segments; ovules 4, compressed, hyaline ciliate along the edges. stigma a rough rim-like disk.

Type specimen number 12531, *A. D. E. Elmer*, Magallanes (Mt. Giting-giting), Island of Sibuyan, May, 1910.

Discovered in rocky ground of a very damp densely forested flat along the Patoo river at 750 feet above the sea. The local Visayan call it "Palad-amok."

Related to yet very distinct from *Boerlagiodendron mindanaense Merr.*

Boerlagiodendron simplicifolia Elm. n. sp.

Shrubby; stem less than 1 dm thick, crooked and subterete, 3 to 5 m high, branched from the middle; wood soft, slightly sweet, odorless, yellowish; bark similar in color except the old epidermis which is gray, thick; branches repeatedly rebranched, widely spreading; twigs terete, 1.25 cm thick, slender, crookedly curved, the leaf bearing portion suberect. Leaves simple, aternatingly clustered toward the ends of the branchlets, mostly ascending, rigidly coriaceous, glabrous, lucid and deep green above, much paler beneath, the average blades 2 dm long by 7 cm wide across the middle or widest portion, oblong, similarly tapering at both ends, base obtuse, apex acutely pointed, curing unequally dull brown on their sides, margins subsinuately serrate, the edges subinvolute in the dry state; petiole 8 cm long, also glabrous, terete, at the base crowned by a green ring-like stipule; midrib prominent beneath, ridged along the upper side; primary lateral nerves 9 to 12 without the intervening secondary ones, divaricate, relatively faint especially on the nether side, reticulations obsolete. Inflorescence terminal, exceeded even by the strict petioles of the leaves, usually solitary; peduncle stout, 1.75 cm long, subterete or compressed, subtended at the base by chartaceous and glabrate bracts; branches numerous, umbellately scattered, 3 to 4 cm long, compressed, green, pulverulent, rebranched from below the middle; ultimate branchlets usually 3-clustered, the terminal one shorter, subtended by short acute bracts, angularly compressed, becoming nearly glabrous, articulate and bibracteate below the middle; flowers odorless, aurantiacus, forming radially spreading clusters 5 to 8 mm across; pedicels several, subreflexed, 2 to 3 mm long, relatively thick, glabrous, green in the fresh state, subtended by vestiges of involucral bracts; ovary barrel shaped, 1.5 mm long and nearly as thick across the middle, terminated by a truncate rim; corolla erect, aurantiacus, valvate in the blunt bud state, glabrous; petals 3, submembranous, becoming easily detached, 1.75 mm long, over 1 mm wide, apex obtusely rounded, separating clear to the base, with a faint midrib; stamens 3, alternating with the corolla segments; filaments dark brown when dry, glabrous, equalling the petals, fleshy, pointed at the distal end; anther much lighter brown, inflexed, introrse, laterally dehiscent, auriculate at base, the upper end truncately rounded, broadly oblong, 1 mm long, dorsifixed; ovary crown with a short thick slightly tapering point. Fruit yellowish at first but soon turning atropurpureus on the shorter stalks, nearly 6 mm long by 4 mm wide, when dry somewhat compressed and grooved on the sides, shining smooth, terminated by the short blunt style vestige; seeds 2, achene-like, 4.5 mm, long by 2.5 mm wide, the ventral edge nearly straight, the back curved and obscurely ridged, the sides very distinctly roughened.

Type specimen number 13689, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Inhabiting a wind swept wooded ridge at 5500 feet altitude of mount Urdaneta, in stony moss covered soil. The Manobo vernacular name is "Bolawanon."

Boerlagiodendron agusanense Elm. n. sp.

An erect unbranched undershrub; stem crooked, subterete, 3 or more m high, 2.5 to 3 cm thick; wood dingy white, soft, with a large whiter colored pith, odorless, slightly bitter; bark smooth, yellowish green, the hypodermis deep green, yellowish on the inner surface. Leaves alternatingly scattered toward the top, chiefly horizontal, nearly flat, coriaceous, much deeper green above, curing unequally dull greenish brown, the lower ones much larger than the upper ones; petiole of the average ones 3 dm long, straight and stout, subterete, caniculate along the upper side below the blade toward the base, at the base thickened and provided with entire ring-like stipules, constricted at the distal end, green and glabrous; lamina of the average ones 4 dm across, orbicular in outline, 5-lobed nearly to the middle, the basal pair of lobes much smaller, base broadly cordate, glabrous, apex of the lobes rounded but terminated into a very sharp narrow point, the margins irregularly serrately dentate; veins as many as there are lobes, darker brown in the dry state beneath, stoutly ridged along the upper side; nerves of the lobed portion only about 9, only one half as many in the smaller lobes, ascendingly curved, more conspicuous on the upper surpace than on the lower, reticulations large and faint, the nerves in the central portion of the whole lamina very fine and divaricate. Inflorescent umbel erect, terminal, subtended by reduced leaves, 5 cm across; stalks with their subtending pulverulent bracts atropurpureus, all erect or ascending, crowded, glabrate and angularly flattened, 5 to 8 cm long, branched at the middle; branches again rebranched at the middle or merely articulate, subtended by conduplicate 1 cm long glabrate more or less oblong and acuminately pointed persistent bracts; pedicels stout, compressed, brown puberulent, solitary or in pairs or even in threes, 1.5 cm long, subtended by reduced bracts; distal end of ultimate branch or receptacle portion 5 mm thick; flowers including the buds aurantiacus, several to many, subsessile or pedicellate, subtended by a lacerated vestige of involucre, even the individual flowers subtended by fimbriate bracteoles which are usually ciliate along the margins; pedicels 1 mm long, glabrous, becoming easily detached, a trifle thicker toward the distal end; every even thicker though similar in shape, 1.5 mm long, terete; buds ellipsoid or obovoid, 2.5 mm long, nearly as wide, easily becoming detached; corolla aurantiacus, towards 3 mm long, valvate in the bud state, ultimately separating into 4 petals, each segment with a faint midrib, glabrous; stamens 4, alternating with the corolla segments; the dark brown and glabrous filaments nearly as long as the corolla; anther much lighter brown or yellowish, broadly oblong, almost as long as the filaments, apex blunt, lobed at the base, dorsifixed; ovary crown a blunt 4-lobed stigma which apparently remains upon the fruit, normally with 4 pendant ovules.

Type specimen number 13546 *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Discovered in wet earth mixed with small stones near a stream of a *Dipterocarpaceae* forested flat at 750 feet above sea level. "Eyangnoc" is the Monobo name.

Nearer to *Boerlagiodendron serratifolium Elm.* than to my *Boerlagiodendron sibuyanense.*

Schefflera multiramosa Elm. n. sp.

A lofty tree climber or rather epiphytic upon them; branches few, widely spreading, gray, 5 cm thick, terete, the leaf bearing ends suberect. Petiole 3 dm long, alternating, subterete, stout, glabrous, thickened and much roughened at the base which is usually provided with a thick and rigid interaxillary sheath or bract, similarly roughened at the distal end; leaves 9 more or less, radially or horizontally spreading, entirely glabrous; blades conduplicate on the dark green shining upper side, paler and duller or subglaucous beneath, apices rather abruptly terminating into an acuminate much recurved point, base rounded, the basal blades smaller, the larger ones 2.5 dm long, nearly 9 cm wide at or above the middle, oblong, entire though the margins are irregularly rugose except toward the base, blackish brown when dry; petiolules 4 to 6 cm long, fluted along the upper side, black when dry, stout, thickened and suberect at both ends; midrib heavy on both sides, rusty brown; lateral nerves finely pinnate, subparallel, 18 pairs in the larger blades and with secondary ones intervening, reticulations obsolete. Inflorescence terminal, composed of several spikes 3 to 5 dm long, ascendingly spreading; rachis green and glabrous, stout, subtended by rigid bracts or merely expanded at the base, coarsely light brown lenticelled; fruit bearing branches quite numerous, solitary or in subwhorls, scattered from near the base, occasionally few rebranched, about 3 cm long, greenish, glabrous, with light brown scars; pedicels 1 to 3 mm long, alternatingly scattered, leaving large scars after falling; very young fruits or old flowers disk-like, 3.5 mm across, with the stigmatic surface glaucous; older or nearly mature fruits flatly globose, 4 mm high and 5 mm across, the basal two thirds surrounded by the calyx, the apical portion cartilaginous and glaucous, terminated by the encrusted stigma; seeds apparently 5 to 7, mango shaped, at least 2 mm wide and 3 mm long.

Type specimen number 11266, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Discovered on the summit wooded ridge of mount Burebid at 3500 feet altitude. Rare and was called "Butong" by the Bagobos.

Schefflera perlucida Elm. n. sp.

Epiphytic shrub, upon lofty trees; stems few, 2.5 cm thick, few m long, downwardly curved and finally suberect, occasionally branched; wood greenish or *Araliaceous* in odor, dingy white, with a large white pith, surface grayish, irregularly checked. Leaves alternatingly crowded toward the distal ends of the rather thick twigs, flattened or shallowly folded on the deeper green and very brightly shining upper surface, leathery, chiefly horizontal, curing much duller brown beneath, glabrous, apical portion gradually tapering into a very sharply acuminate twistingly recurved point, base broadly obtuse or rounded, entire margins irregularly wavy, oblong, the larger lamina 2 dm long by 6.5 cm wide at or just below the middle, the 9 to 11 leaflets radially spreading; petiole 3 dm long, greenish except the thickened base which is covered with grayish excrescences and provided with a rigid intermarginal membrane or bract, striate, flattened and shallowly grooved along the upper side, ascendingly curved at the distal end; petiolules 7 cm long, also glabrous and somewhat thickened at both ends; midrib ridged on both sides; lateral nerves of the larger blades about 40, counting the secondary ones which are almost as conspicuous from the upper side, pinnate, tips united into a submarginal line, reticulations obscure. Spikes several, subtended by bracts, terminal, ascending, 2 to 3 dm long, dark green and glabrous, coarsely yellowish gray lenticelled, rather profusely branched from near the base; branchlets divaricate, usually unbranched, 3 to 5 cm long, solitary or in subwhorls, pale green, drying dull brown; pedicels also glabrous, 2 mm long, leaving large scars after falling, divaricate, relatively thick; young fruits top shaped, the older ones flatly globose, 5 mm in diameter, first turning cremeus, finally dark wine red, the glabrous calyx enclosing two thirds of the entire fruit, stigma forming a circular encrusted disk; seeds about 7, crustaceous, 2 by 3 mm in size.

Type specimen number 14193, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Collected from moss laden larger limbs of trees on a wind swept ridge leading from lake Danao toward the summit at 5500 feet altitude. "Tonay" is the Manobo name.

A critical segregate from the preceding, but leaves average smaller, more tapering toward the sharp point, with more numerous nerves and much brighter shining on the upper side even so in the dry specimens.

Schefflera apoensis Elm. n. sp.

Coarse climber; stem 2.5 dm thick; branches few, rigid, thick, extending clear to the tops of large trees, the ultimate twigs as thick as a man's arm; wood whitish, with a peculiar greenish bitter taste and odor, easily splitting; bark smooth, grayish. Leaves alternate; ascending petiole 8 to 9 dm long, glabrous, obscurely angular, much thickened and warty at the base, with an interaxillary 5 cm long very thick and acuminately pointed bract; petiolule relatively very stout, 2 to 3 dm long, glabrous, thickened at both ends; leaflets 9 to 12, ascendingly curved from the suberect petiolule end, conduplicate on the upper dark green surface, beneath yellowish green, broadly obtuse to rounded at base, apex abruptly terminated into an acute or acuminate point, rigidly coriaceous, marginal sides irregularly wavy in the fresh state, otherwise entire, curing dull brown on both sides, oblong, the larger blades 1 by 3 dm, the smaller ones subelliptic; midrib very pronounced beneath; main lateral nerves 11 on each side but with secondary ones intervening, ascending, less pronounced, tips curved, reticulations obscure. Inflorescence terminal, composed of spikes 8 to 6 dm long; stalks subtended by bracts, stout, glabrous, subterete and striate, fruit, bearing from below the middle, turning reddish brown on the exposed sides; heads globose, 2.5 cm in diameter, yellowish green, upon thick 5 to 8 mm long, striately wrinkled, stalks also becoming reddish brown; flowers cremeus, odorless; young fruits sessile, forming concrete heads, 7 mm long, 4 mm thick above the middle, the lower two thirds compressed or angular, the apical one third pyramidally conical and encrusted, in the dry state strongly rugose, the blunt stigma rugosely folded, the contiguous sides thin and much paler yellow; seeds 3, surrounding a triangular central placenta, the young seeds mango shaped, attached at the bottom, minutely ciliate along the edge, 4 mm long, 1.5 mm wide.

Type specimen number 10488, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, May, 1909.

Collected this strangling large tree climber in humid forests at 4000 feet altitude. "Pararan" is the Bagobo name.

Closely allied to *Schefflera oblongifolia Merr.*

Schefflera merrillii Elm. n. sp.

A tree climber; stem 5 cm thick, terete; branches at the top and widely spreading, rather crooked, yellowish, 2.5 cm thick or only one half as thick at the leaf bearing ends; wood sappy white, bitterish, soft and porous, white as well as the large pith; bark gray, smooth. Leaves alternate along the twigs, ascending; petiole 2 dm long, striate, terete, thickened at the base and expanded into an intermarginal bract; blades 5 to 9, variable in size, thickly coriaceous, glabrous, ascending or horizontal, dark green on the upper shallowly conduplicate surface, much lighter green beneath, drying blackish brown, entire or occasionally serrately toothed above the middle, the average ones 2 dm long by 11 cm wide at the middle, elliptically elongated, broadly rounded at the base, apex abruptly acute to acuminate; petiolule 2 to 5 cm long, striate, dull green and glabrous, swollen at the base, ascendingly curved at the distal end; midrib pronounced beneath, less prominent above; lateral nerves 6 to 8 pairs, ascendingly curved, also conspicuous beneath, reticulations coarse and relatively bold. Infrutescence terminal, ascending, 3 to 5 dm long, branched from near the base, few to several and spicate, subtended by stipular-like bracts; rachis green, glabrous, blackish brown in the dry state; fruit bearing branchlets scattered, divaricate, 5 or more mm long; heads composed of few to several sessile fruits; fruits salmon colored, obovoid or broadly ellipsoid, 5 mm long at least, several in a head or cluster, two thirds of the basal portion surrounded by the calyx, glabrous and shallowly rugose, the apical one third flattened except the blunt conical and much thickened stigma; immature seeds mango shaped, 4 mm long, only one half as wide across the middle, apparently attached from the base and contained in a bony exocarp.

Type specimen number 11277, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Discovered in humid forests at 3000 feet altitude. The Bagobos call it "Basuloi", and is here named after *Mr. E. D. Merrill.*

Schefflera catensis Elm. n. sp.

Subscandent and epiphytic; stem 5 m long, 1.25 dm thick, branched from near the base, the ultimate ones rather slender; wood soft, greenish, with the usual *Araliaceous* odor; bark smooth, yellowish, twigs brown lenticelled. Leaves alternate, ascending; petiole terete, 1.5 to 2 dm long, dark green, grooved along the upper side; petiolules 2 to 5 cm long, strict, radially spreading, minutely grooved above; blades ascending, recurved toward the acute to acuminate apex, flat or shallowly conduplicate on the upper darker green side, paler or yellowish green beneath, the edges coarsely wavy and with few widely scattering serrate teeth except the entire broadly cuneate basal portion, oblong, the larger lamina 12 cm long by 4 cm wide at the middle or just above it, the smaller ones one half as large, 7 to 9-foliate, curing dull brown on both sides; midrib quite prominent; the lateral nerves 5 to 8 on each side, ascending, straight, forked toward the distal end, more evident from beneath, cross bars and reticulations relatively coarse. Panicle terminal, the several stalks alternatingly clustered at the ends of the twigs, 1 dm to 2.5 dm across, glabrous and light green; main branches ascending, rebranched from above the middle, ultimate branchlets as long as 2 cm; flowers in dense umbels, their slender pedicels less than 5 mm in length; pedicels about 3 mm long, glabrous, yellowish green, umbellately spreading, subtended by minute bract vestiges or without them, a trifle thicker toward the base and subarticulate at the base; calyx similarly colored, 3 mm across, broadly cup shaped, the rim submembranous, 1.5 mm deep; corolla yellowish, hood shaped, 4 mm high and fully as wide, becoming easily detached, glabrous, apex rugose and somewhat thickened, somewhat glandular along the striae on the inner side; stamens about 8, inserted upon the inner base of the corolla and upon the ovary rim; filaments 3 mm long, flattened and expanded toward the base, tapering toward the deflexed apex, yellow, also glabrous; anther oblong, 2.5 mm long, dorsifixed, ends rounded or emarginate, nearly 1 mm wide, creased longitudinally; ovary crown flatly conical, style very short, stigma large.

Type specimen number 11519, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Discovered in very wet dense forests along the Cati creek at 6000 feet altitude of mount Apo. "Salapi-a-bucolod" in the Bagobo dialect.

Distinct from *Schefflera cumingii* (*Seem.*) *Merr.* and *Schefflera bordeni Merr.*

Schefflera urdanetensis Elm. n. sp.

Epiphytic shrub and subscandent in habit when young; main stem 2.5 cm thick, terete, repeatedly branched from the base, the branches horizontally spreading; the lax and crooked twigs descending, glabrous, yellowish, striate at least in the dry state, 3 to 5 mm thick. Leaves horizontal, alternatingly scattered, upon ascending petioles; petiole 5 to 10 cm long, slender, glabrous, green, wart-like at the thickened base, suberect at the distal end; leaflets 5 or the upper ones only trifoliate, conduplicate, acute apex recurved, broadly obtuse to rounded at the base, margins entire and subinvolute in the dry state, paler green beneath, curing blackish on both sides, elliptically elongated, the average blades 1 dm long by one half as wide, coriaceous, entirely glabrous; petiolule ascending, green, slender, drying blackish, also suberect at the distal end, varying from 2 to 5 cm long; midrib conspicuous beneath, plane above, similar in color when dry, lateral main nerves 5 to 7 pairs, divaricate, with secondary intervening ones, their ends arched and faintly united, reticulations quite numerous and equally plain on both sides. Stem or branches terminated by few widely spreading spikes, the flower bearing twig occasionally broad bracteated; rachis glabrous, green, very slender, usually curved, at the base ebracteate, 1.5 to 2.5 dm in length; pedicels very slender, 6 to 9 mm long, green and glabrous, solitary or occasionally 2 to 3-clustered, widely scattered along the rachis from below the middle; calyx short turbinate or pedicel-like, glabrous, green and reddish brown on the exposed sides, terminated in a rim, 1 mm high and fully or broad across the top; corolla early falling, ultimately separated into 5 petals; each segment distinctly with 3 parallel nerves, truncate at the base, acute at apex, glabrous, cremeus, occasionally dotted with elongated spots, triangularly ovate, somewhat unequal in size; stamens 5, alternating with the corolla segments, inserted at the base of the large ovary; filaments less than 1 mm long, yellowish, glabrous; anthers as long, broadly ellipsoid, a trifle broader below the middle, auriculately lobed at the base, emarginate at apex, attached at the middle, laterally dehiscent; ovary 2 mm wide, less in heigth, glabrous and glaucous, indented at the apex. Nearly mature fruit 5 mm long and 3.5 mm thick across the top, green, then citrinus, finally shining purple red, turbinately elongated, the apical one third grayish white and with rugosely encrusted stigmatic portion; seeds normally 5, compressed, achene-like.

Type specimen number 14075, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Upon a small tree fifteen feet above ground, on a very steep densely wooded incline at 5750 feet altitude, along the general route between lake Danao and the summit. "Pararan" in Manobo.

Schefflera albido-bracteata Elm. n. sp.

Epiphytic; stem 3.5 cm thick, terete, ascending, 3 to 4 m long, repeatedly branched, crooked; woody tissue sappy white, odorless and tasteless, pith exceedingly large and duller in color; bark relatively very thick, smooth and grayish green on the surface, deep green beneath the epidermis, the inner and greater portion wood color, its whitish juice semiviscid; branches slender, sparingly rebranched, the 1.25 cm thick twigs suberect. Petioles of leaves alternating toward the ends of the twigs, divaricately spreading, deep green, glabrous, terete, 1.5 to 2 dm long, at the base subtened by a broad and emarginately rounded interaxillary glabrous bract; petiolule varying from 2 to 5 cm long, horizontally spreading, also glabrous, subterete and finely striate, ascendingly curved at the apex, narrowly caniculate along the upper flattened portion, yellowish brown when dry, 7 to 13; blades as many as petiolules, oblong or the smallest ones broadly lanceolate, obtuse to subrounded at base, apex acute to slenderly acuminate, the entire margins subinvolute in the dry state, the average lamina 13 cm long by 4 cm wide across the middle or a trifle below it; midrib ridged beneath, plane above; lateral nerves 9 to 11 on each side, ascending, tips interarching, more conspicuous beneath, reticulations numerous and quite evident from both sides. Inflorescence upon short thick more or less bracteate stalks or peduncles, terminal, radially spreading or more suberect, spikes several, alternatingly clustered, slender, dark green when fresh, finely striate and in the early state more or less pulverulent, 1.5 to 2.5 dm long, at the base amply provided with bracts; bracts heavy, white on the dorsal side, brown pulverulent on the ventral side, oblong, 1.5 to 3 cm long, relative in width, ventrally folded or imbricated; flowers in small clusters, promiscuously scattered along the whole length of the spikes, subsessile or upon as long as 5 mm long slightly pulverulent and green stalks; pedicel 1.5 mm long, glabrous, yellowish green; calyx disciform, 1.5 mm across, enclosing one half of the ovary, similar in color and also glabrous; corolla longitudinally creased, cremeus, the 5 segments ultimately separating, compressed globose, occasionally gland spotted; each petal with 3 parallel nerves, nearly 2 mm long, base truncate, apex acute, triangularly ovate in shape; stamens 5, inserted about the ovary; filaments less than 0.5 mm long, light yellow; anthers broadly ellipsoid, lobed at base, notched at apex, about as long as the filaments and of the same color; ovary crown flattened and obscurely rugose, terminated by the thickened stigmatic group.

Type specimen numbers 13722 and 13808, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Both of these numbers were collected along the forested depression between Duros and Cawilanan peaks at 3500 feet altitude. Both of them are lofty tree epiphytes, and although the former was called "Makinging" and the latter "Oton-oliton" by the same Manobos, they no doubt are the same species. In this same region I noticed occasionally large shining vermillion *Schefflera* fruits on the ground, but their specific identity is not known.

Quite close to the type of *Schefflera angustifolium Merr.* from San Mateo, Luzon.

Schefflera agusanensis Elm. n. sp.

A looping and sprawling subscandent shrub; old stem 7.5 cm thick, terete, much curved or looping, branched toward the top; wood dingy white, soft, porous and with fine radial lines, odorless, sweet to taste; bark thick, dirty brown and smoothish, yellowish white otherwise, its sap latex-like; branches long, drooping, grayish white, bearing ascending rather short branchlets, the green young twigs glabrous. Leaves alternate; petiole 1 dm long, also glabrous, terete, expanded at the base; petiolule minutely caniculate above, 2 to 4 cm long, radially spreading, 5 to 7, they as well as the petiole dull yellowish brown in the dry state; blades curing grayish, coriaceous, elliptic, base obtusely rounded, the recurved apex acute, entire, 5 to 11 cm long, 2.5 to 5.5 cm wide at the middle or a trifle above it; midrib more prominent beneath, nerves

4 to 7, ascending, tips anastomosing, reticulations more apparent on the nether side. Inflorescence or infrutescence terminal, suberect, usually 3 or more clustered, stalks about 1 dm long, green, subangular, the central one paniculately branched from below the middle, the lateral ones from above the middle, glabrous, subtended at the base by a short involucral bract; branches alternate, divaricate, the lower or longer ones rebranched from above the middle, the slender ultimate ones less than 1 cm long; pedicels few to several and umbellately spreading, yellowish when dry, articulate at the base, 7.5 mm long; young fruits broadly turbinate, 3 mm long and nearly as wide across the tip, the apical one third truncately rounded and subglaucous; older fruits subglobose, 5 mm across, the basal two thirds surrounded by the glabrous yellowish calyx, the apical portion glaucous green and nearly truncate, the 5 stigmas forming a flat obscurely rugose crust; immature seeds 5, nearly as long as the fruit, much compressed.

Type specimen number 13652, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Collected in stony ground and among jungled woods along the Catangan creek at 500 feet altitude. The native or Manobo name is "Pararan."

Very near to *Schefflera bordeni Merr.* in relationship.

LEAFLETS OF PHILIPPINE BOTANY

EDITED BY A. D. E. ELMER, A. M.

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MYRTACEAE FROM MOUNT URDANETA

by

A. D. E. Elmer

DECASPERMUM Forst.

Decaspermum paniculatum Kurz

Field-note: —Erect shrub, in moist gravelly ground of wooded banks along the Dalahion creek at 750 feet altitude; stem 4 inches thick, 10 to 15 feet high, branched from below the middle; wood odorless or nearly so, tasteless, rather hard and brittle, the outer portion sappy white, reddish twinged toward the center; bark brown, finely checked longitudinally; main branches ascending, crookedly rebranched, the ultimate ones lax and numerous, often drooping; leaves chartaceous, ascending from the base, strongly recurved, much paler green beneath; infrutescence subpendant, the stalks with yellowish green bracts; the hard fruits dark green yet ultimately soft and vinosus when fully ripe. "Halgus" in Manobo.

Represented by number 13907, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

In all my previous collections, this species is always recorded from two to three times higher altitudes. In our present locality it no doubt represents a botanical float from a much higher elevation.

MEARNSIA Merr.

Mearnsia halconensis Merr.

Field-note:—Small erect and burly tree on the summit of a wind swept rocky peak of the Masay or Urdaneta group of mountains at 5750 feet; stem 6 inches thick, terete, nearly straight, branched at the top, only 20 feet high; wood heavy and very hard, sappy white on the outside, gradually changing to the reddish brown center; bark dull brown and scaling in linear plates, that on the branches gray and smooth; branchlets numerous, erect, forming dense masses; leaves ascending, flat, paler beneath, the thickened margins appearing recurved, rigidly coriaceous; infrutescence in dense clusters, lateral; calyx angular and green, with deep red glandular spots, usually canescent toward the base on the outside; corolla light or pale purple, the interlaced stamens with the anthers purpureus; style of the same color, the calyx cup very dull red; fruits dry and persistent, angularly ridged, bearing the 4 blunt apical teeth, dehiscing by breaking through the walls between the ridges; seeds brown, 1 mm long, linear, more pointed toward one end, very numerous in each of the 4 carpels. "Magadhingan" in Manobo.

Represented by number 13759, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Quite common on the summit ridges. Its profuse brilliant red flowers are showy objects among the otherwise somber forest vegetation. This is the first collection made besides the type on mount Halcon.

RHODOMYRTUS (DC.) Reichb.

Rhodomyrtus surigaoense Elm. n. sp.

Rigid shrub or small burly trees; stem 7 cm thick, 5 m high, chiefly branched toward the top; branches stout, rigid, crooked, subterete; the twigs rather lax and ascendingly curved, subterete, ashy gray tomentulose; wood hard, covered with smooth grayish white bark, whitish on the outside, brownish or reddish brown toward the center.

Leaves curing light brown, coriaceous, ascending, profuse toward the ends of the branchlets, the younger ones opposite, the older ones subopposite, ascending, variable in size, the smaller ones 3 cm long and lanceolate, the basal or larger ones 1 dm long by 3.75 cm wide across the middle, oblong, the entire margins subinvolute in the dry state, gradually extended into the acute to acuminate apex, base obtuse in the larger and acute in the smaller blades, glabrate above, cinereous beneath especially along the nerves, ultimately becoming glabrate, the nether side minutely black punctate under a lens; petiole 5 to 15 mm long, cinereous in the early state, grooved along the upper side; midvein caniculate from the upper side, prominent and cinereously covered beneath; lateral nerves 6 to 9 pairs, strongly ascending and curved, the middle pair or pairs extending clear to the apex and united with the upper less prominent 2 to 3 pairs of nerves, reticulations faint. Flowers odorless, subpendant, usually solitary from the leaf axils, persistent; pedicel 6 mm long, twice as long in the fruiting state, densely cinereously pubescent in the bud state and in anthesis, otherwise glaucous green, usually recurved; calyx campanulate, 5 mm high and 4 mm thick, short canescent, subtended by a pair of acute closely appressed bract-like teeth, shallowly constricted below the rim, terminated by 4 segments; sepals nearly 4 mm wide, less in length, leathery, similarly canescent on both sides, more or less pellucid punctate, inserted upon a fleshy torus, truncately rounded at apex; petals rose red or pinkish white when old, becoming easily detached, the 4 larger ones alternating with the sepals, the inner two or three less than one half as large, broadly elliptic, parallel veined and obscurely nerved, the outer occasionally finely ciliate along the entire margins, the marginal portion of the inner ones more or less rolled inwardly and finely rugulose, glandular on the back; stamens many, spreading, 3 mm long more or less, the red filaments glabrous and thread-like; anther light yellow, cordately elliptic, 0.5 mm long, basifixed; style 4 to 5 mm long, thick, terete, glabrous, tipped at the apex; stigma globose, 0.75 mm thick, black in the dry state, appearing obscurely plaited. Fruit indehiscent, several celled, each cell with several seeds; seeds densely glandular, brown, glabrous, compressed and obovately triangular from the side view, 2.5 mm long.

Type specimen number 13709, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Observed at 5500 feet altitude on mount Urdaneta among interlaced jungles of a mossy ridge (small leafed form); and at the summit of Cawilanan peak at 500 feet lower elevation (large leafed form). "Dayopod" in Manobo.

Not *Rhodomyrtus tomentosa Wight*, the only other species thus far known from the Philippines.

EUGENIA Linn.

Eugenia longiflora (Presl) Vil.

Field-note:—Small erect tree in a densely wooded steep incline at 2500 feet in well drained more or less stony soil; stem 1 foot thick, 30 feet long, crooked, subterete, branched from near the middle; wood quite hard, heavy and brittle, dingy or very dull white or nearly brown throughout, odorless and tasteless; bark smoothish or lenticelled, mottled, cinnamon brown on the lax branchlets; main branches ascending, ultimately numerously rebranched, twigs lax; leaves copious, horizontal or descending, very smooth and shining on both sides, subcoriaceous or submembranous, conduplicate and with strongly recurved tips, paler on thenether side; inflorescence erect, stalks relatively thick and brown, calyx cup deep green, its segments lighter green; petals greenish, all falling separately, caducous; flowers odorous, the stamens white. "Magontambis" in Manobo.

Represented by number 13390, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Eugenia aherniana C. B. Rob.

Field-note:—Small and subterete tree, in stony wooded flats along the Dalahion creek at 3000 feet or just above its falls; wood sappy white, gradually changing brownish toward the center, heavy, hard, quite without odor or taste; bark grayish, smooth, whitish on the inner side; stem 8 inches thick, irregularly round, crooked, 30 feet high, branched toward the top; main branches ascending, ultimately numerously rebranched, twigs lax; leaves coriaceous, descending, folded or curved on the upper much deeper green surface; fruits terminal or lateral, subglobose, 0.5 to 0.75 inches in diameter, ochraceus, soft and vinegar juicy when mature. Called in the Manobo dialect "Hangosan."

Represented by number 13780, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Eugenia rosenbluthii C. B. Rob.

Field-note:—Small tree in a wet mossy depression at 5750 feet of Masay or Urdaneta; stem 8 inches thick, 20 feet high, subterete, crooked, branched toward the top; wood hard and burly, sappy white on the outside, reddish brown toward the center, quite odorless and tasteless; main branches few, ascending and crookedly rebranched; bark brown, somewhat shreded, gray and smooth on the branches; twigs numerous, erect, forming dense masses; leaves horizontal or ascending, rigidly coriaceous, strongly recurved at apex, otherwise shallowly folded upon the upper much deeper green surface; infrutescence erect and terminal, its talks dull green; fruits atropurpureus. The Manobos call it "Magcaymag."

Represented by number 13753, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Rather typical of *Rosenbluth's* collection from the mountains of Leyte. Its profuse atropurpureus fruits make quite a floristic contrast to the generally dull green summit foliage.

Eugenia diplycosifolia C. B. Rob.

Field-note:—Burly tree upon the cold mossy wooded summit of Masay or Urdaneta at 6500 feet altitude; stem suberect from the base, 1 foot thick, wadded, 25 feet high, crooked, branched from the middle; wood odorless and without taste, very hard, the thin outer portion whitish, gradually changing to the greater central mass atropurpureus; bark very dark brown and longitudinally checked, otherwise latericius; main branches ascending, crooked, ultimately numerously rebranched; twigs relatively short, numerous, erect, brown; leaves similarly disposed, slightly recurved, coriaceous, paler green beneath; flowers erect, faintly fragrant, of a bright rich yellow. "Pagolasan" in Manobo.

Represented by number 14087, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Eugenia cumingiana Vid.

Field-note:—Tree; twigs numerous, slender, brown, ascending; leaves subcoriaceous, ascending or horizontal and recurved, the upper deeply folded surface shining and deeper green, marginal sides toward apex wavy; inflorescence erect, odorless, the stalks pale green and flexible, the flowers creamy yellow.

Represented by number 14209, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Eugenia bataanensis Merr.

Field-note:—Shrub-like; in the forested region of lake Danao at 5000 feet altitude; stem 10 feet high, with numerous crooked branchlets; flower pendulous, creamy white, odorless, 0.75 inch or more across; fruit terminal and subsessile.

Represented by number 14252, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Leaf bases more rounded and flower and fruit nearer subsessile in ours than in *Merrill's* species.

Eugenia leptogyna C. B. Rob.

Field-note:—A rather small sized tree in dense woods of a humid steep slope between the peaks of Duros and Cawilanan at 3500 feet altitude; stem 1 foot thick, 30 feet high, nearly straight, branched from above the middle; wood hard and heavy, dull white or heartwood nearly castaneus, even the sapwood with scattered linear castaneus colored tissue, quite odorless and tasteless; bark relatively thin, smoothish, light castaneus except the gray surface; main branches ascending, ultimately numerously rebranched; twigs reddish brown and ascending; leaves descending, coriaceous, folded and strongly recurved, shining above, paler green beneath; infrutescence erect, dark green even the reflexed calyx lobes. Its vernacular Manobo name is "Balibadan."

Represented by number 13723, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Eugenia livida Elm. n. sp.

A small slender tree; stem 1 dm thick, crooked and subterete, 7 to 10 m high, branched from above the middle; wood hard, white on the outside, gradually changing to the latericius heartwood; bark yellowish brown, smooth or scaling in small plates, otherwise of the same wood brown color; twigs laxly rebranched, horizontally spreading, the young portion glabrous and yellowish. Leaves opposite, scattered, similarly spreading or descending, the acuminate and subfalcate tips recurved, very dark green above, light or yellowish green beneath, curing unequally brown on two sides, glabrous, subchartaceous or subcoriaceous, obtuse at base, entire, oblong, the average ones 15 cm long by one third as wide across the middle or a trifle below it; midrib in the dry state deeper or reddish brown, shallowly caniculate along the upper surface, glabrous, very prominent beneath; lateral nerves 7 to 11 pairs, strict, relatively prominent and similar in prominence, divaricate, the basal ascendingly curved pair arising 1 cm above the base of the lamina and forming conspicuous submarginal veins 5 mm below the edge, the balance of the nerves straight, reticulations obsolete or none; petiole 5 mm long, also glabrous, caniculate, drying dark reddish brown. Flowers not observed. Infrutescence in small clusters from the stem only, hanging from roughened portions or outgrowths of the stem (tubercles), upon brown and glabrous 2.5 cm long usually unbranched stalks; fruits when mature ranging from 1.5 to 3 cm across, usually flattened or irregularly globose, smooth, hard, glabrous, terminated by the broad and rather thickened calyx rim, smooth and shining though rugose in the dry state, yellowish on the under or shaded side, otherwise light lividus.

Type specimen number 13983, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Collected in dry well drained soil of a steep densely forested slope at 1250 feet altitude. Rather common in this place but no where else seen. Its shining lividus colored inedible fruits are very conspicuous. "Langawisay" in Manmanua and "Cagagco" in Manobo.

Possibly only a form or variety of *Eugenia mananquil Blco.*, yet in my opinion specifically distinct.

Eugenia vaccinioides Elm. n. sp.

A burly tree; stem 3 dm thick, irregular, crooked and inclining, more or less 8 m high, rigidly branched above the middle; wood heavy and very hard, the thick sapwood white, abruptly changing to a nearly latericius brown, slightly bitter or tasteless, entirely odorless; bark dark brown, its surface vary dull; main branches also crooked ultimately numerously rebranched; twigs short and erect, the ultimate ones glabrous and angularly ridged or winged. Leaves also erect or ascending, copious, opposite, along the twigs only, flat, lucid above, paler green beneath, glabrous, rigidly chartaceous, elliptic or elliptically oblong, 3 cm long by one half as wide across the middle, drying paler brown on the nether side, the entire margins subinvolute at least in the dry state, the recurved apex acute though terminated with blunt points, acute to obtuse at base, generally the terminal ones reduced; midrib deeply impressed on the upper side, reddish brown beneath and quite conspicuous toward the base, the lateral nerves and reticulations very minute or barely visible from the under side; petiole 1 to 3 mm long, glabrous, flattened along the upper side. Infrutescence profuse, erect, terminal, exceeding the foliage; stalks few to severally clustered or solitary from the uppermost leaf axils, at most 5 cm long, glabrous, rather slender, few, short branched from above the middle, pale green, sharply angled or winged, the ultimate branchlets or pedicels 1 cm long; fruits or berries 8 mm in diameter, flatly globose or truncate at the broad and sunken apex, dark vinosus and juicy when mature, acrid to taste, much wrinkled when dry.

Type specimen number 13760, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered on a minor summit peak at 5750 feet altitude, in a wet cold densely moss laden and wind beaten place partly extending over the crest of a precipice. The Manobo name is "Magpong-pong."

Its foliage is that of *Eugenia acrophila C. B. Rob.* but fruits are different. The writer first took it to be a species of *Vaccinium.*

Eugenia binacag Elm. n. sp.

Large tree; trunk terete, 1 to 1.5 m in diameter, 20 to 30 m high, mostly branched toward the top; wood hard, heavy, burly, odorless, slightly bitter, the outer portion white though abruptly changing to a testaceus brown which becomes darker toward the center; bark greenish, gray when old, peeling in elongated thin plates more or less twisting about the stem, usually one end separating and curved from the surface leaving the brown nether side exposed, the plates finally falling and piling up around the base of the old trees; main branches divaricate, rebranched; twigs glabrous, green, angled, rather slender and lax, usually ascendingly curved. Leaves alternate, subchartaceous, subpendant, shallowly conduplicate, recurved at the acute to acuminate apex, base obtuse or obtusely rounded, glabrous, deeper green on the upper surface, sides coarsely wavy, ovately oblong or the smaller ones broadly lanceolate, the average blades 12 cm long by 5 cm wide below the middle, entire, curing dark brown on both sides; petiole entirely glabrous, 1.25 cm long, stout, compressed, shallowly grooved along the upper side; midnerve stout and edged beneath, drying brown, obscurely impressed on the upper side of the leaf; lateral nerves 7 to 9 or even more on each side, ascending, obscure, reticulations not evident. Panicle profuse, erect, all terminal, glabrous, 1 to 1.2 dm long or longer, the lower and longer branches subtended by leaves, the opposite branchlets freely rebranched from the middle, the larger ones compressed and fluted along the edges, the ultimate ones angular and relatively short, all greenish; the obovoidly globose buds yellowish green; flowers odorless, umbellately clustered at the distal end of the ultimate branchlets, occasionally solitary or in pairs; pedicels also angular, glaucous green, 3 to 4 mm long, glabrous, ebracteolate; calyx glabrous, short cup shaped, smooth, yellowish on the exterior, 3 mm high, fully as broad across the truncate top; petals stramineus caducous, becoming detached as a flattened cone-like calyptra, at least 3 mm across, radially striate, with few large glands on the exterior, mucronately pointed, enclosing the stamens and inserted upon the thick calyx rim; stamens similar in color, the inner ones much shorter, subpersistent, inserted upon the inner calyx rim, strongly inflexed in the bud state, widely spreading in anthesis; filaments filiform, glabrous, the longer ones 5 mm, pointed at the apex; anthers pale yellow, scarcely more than 0.25 mm across, brown apiculate, the round lobes subhyaline, auriculate at the base, versatile; ovary sunken in the calyx cup, its apex flatly conical, yellow, extended in a short thick style; stigma terminal, about as thick as the style. Young fruits flatly globose.

Type specimen number 13865, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

These magnificent trees were observed only in stony or gravelly flats of the Minusuang river at 500 feet altitude and along the smaller creek beds up to 1500 feet above sea level. All Manobos know it as "Binacag."

Eugenia vernonioides Elm. n. sp.

A middle sized tree: stem 3 dm thick, subterete, 12 m high, branched from the middle; main branches ascending, ultimately spreading and numerously rebranched; twigs erect or ascendingly curved, terete; wood hard and heavy, sappy white on the outside, brownish tinged toward the center, odorless and tasteless; bark smooth or roughened with lenticels, grayish and more or less mottled when old, the young portion and the hypodermis when old latericius. Leaves opposite, ascending, glabrous, rigidly coriaceous, shallowly folded on the upper much darker and sublucid green surface, the sides toward apex slightly wavy, obovately elliptic, base obtuse, apex rounded or with a broadly obtuse point, curing very dark brown, the entire margins subinvolute in the dry state, the average lamina 7 cm long by 3 cm wide above the middle; petiole 5 to 8 mm long, caniculate along the upper sides, rugose and nearly flat above, prominent and almost black when dry, the 7 to 9 or even 11 pairs of lateral nerves very obscure, reticulations none. Inflorescence lateral along the twigs and usually below the foliage, opposite or in the axils of the leaves or from their scars, solitary or clustered, glabrous, 2 to 3 cm long or longer, ascending, rebranched from the middle or above it; branchlets drying black, angular or subterete, divaricate, the lower or longer ones less than 1 cm long, the upper ones very short and subtended by bract vestiges; flowers glomerated at the distal end of the ultimate branchlets, subsessile or upon short relatively thick pedicels; buds obconic; calyx sessile, short turbinate, verrucose with glands on the exterior, nearly 4 mm across, the rim roundly 4-toothed; petals 4, alternating with the calyx teeth, spreading, subpersistent, 3 mm across, light yellow, the subhyaline margins nearly white, few nerved in the middle, provided with clear reddish glands in among the nerves, orbicular in shape; stamens incurved in the bud state, otherwise spreading, the outer ones about 3 mm long, inserted upon the inner calyx rim; filaments glabrous, fleshy, the distal pointed portion dark brown in the dry state; anther 0.25 mm across, short ovoid, subbasifixed, cordate at base, apex blunt or emarginate, laterally dehiscent, the emptied cells spreading; cap of ovary short canical, extended into a short comparatively thick style; stigma terminal as large as the style.

Type specimen number 13826, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered in humus covered rocky soil of dense woods along the ridge above lake Danao at 5250 feet altitude. "Talingahon" in Manobo.

Apparently most closely related to *Eugenia similis Merr.* as far as the Philippine species are concerned. Its inflorescence strongly resembled that of certain species of *Vernonia.*

Eugenia holmani Elm. n. sp.

A medium sized tree; trunk 5 dm thick, 15 m high, terete, straight, branched from above the middle; wood moderately hard, the thin outer portion white, otherwise latericius, odorless and without taste; branches numerously and crookedly rebranched, the ultimate ones comparatively short, twigs terete; bark very thick, epidermis grayish white or when young brown, surface smooth and thinly scaling, the inner portion deep reddish brown. Foliage membranous or nearly so, chiefly horizontal, folded and strongly recurved toward their acute to acuminate apex, base acute to obtuse, glabrous, sublucid above, the two sides curing unequally blackish brown, variable in size, the average ones 1 dm long by 3.75 cm wide at the middle, opposite, rather numerous, margins entire, oblong; petiole grooved along the upper side, glabrous, black on the dry specimens, 5 to 8 mm long; midrib conspicuous beneath, flat on the upper side, curing blackish; lateral nerves fine, divaricate, 9 to 11 on each side. their tips interarching and forming a submarginal faint line 3 to 4 mm below the edge, frequently branched or with secondary ones intervening, minutely punctate beneath, reticulations equally visible from both sides. Inflorescence lateral or from the lower leaf axils, divaricate, solitary, occasionally in pairs but usually in small clusters, averaging 3 cm long, divaricately branched from below the middle; branches more or less angular, only sparingly rebranched, glabrous and turning black upon drying; flowers 1 to 3 clustered toward the distal ends of the ultimate stalks, sessile or subsessile or when solitary appearing upon 1 to 3 mm long pedicels, all branchlets without bracts or bract vestiges; bud obovoid; calyx short turbinate toward the base, the upper portion with 4 roundly pointed segments, coriaceous, punctate, glandular, 4 mm across the widest portion, ochroleucus except the red segments; petals caducous, also ochroleucus, 2 mm across, orbicular, margins hyaline, densely pellucid glandular, 4, alternating with the calyx segments; stamens numerous, inwardly curved, ultimately spreading, very unequal in length; filaments relatively thick, yellowish white, pointed at apex, the longer ones 3 mm in length; anthers 0.33 mm across, nearly orbicular, bilobed at base, the emptied hyaline cells widely spreading, light yellow; top of sunken ovary nearly flat, glabrous, terminated into a few mm long erect style; stigma terminating the tapering style.

Type specimen number 13356, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Found in moist compact leaf covered and well drained soil of a forested ridged at 2000 feet above sea level. The Manobos call it "Sangnanan." Named after *Prof. R. H. Holman*, a former member of the faculty of the College of Agriculture, University of the Philippines, Los Baños.

Its alliance is clearly with *Eugenia atropunctata C. B. Rob.*, though the leaves are different. By mistake it was distributed under *Eugenia bakeri Elm.*

Eugenia bakeri Elm. n. sp.

A middle sized and upright tree; stem 2.5 dm thick, 12 m high, nearly straight, more or less wadded toward the base, branched from above the middle; main branches ascending, crooked, ultimately numerously rebranched; twigs lax, ascending; wood hard and quite heavy, testaceus except the thin whitish sapwood; bark smooth, yellowish gray on the surface, otherwise latericius. Leaves opposite, scattered along the subterete and slender portion of the ultimate branches, coriaceous, horizontal or descending, glabrous, lucid above and much lighter or yellowish green beneath, marginal sides coarsely rugose especially toward the acuminate to subcaudate recurved tips, base obtuse, oblong, 1.5 dm long by 4.5 cm wide across the middle, occasional ones only one third as large, entire, deep brown when dry; petiole 5 mm long, blackish on the dry specimens, entirely glabrous; midrib prominent, caniculate along the upper surface, shining and reddish brown beneath; lateral nerves also conspicuous, divaricate, 5 to 8 pairs, strongly united into a submarginal vein 5 mm below the edge, secondary nerves relatively faint and reticulations numerous. Inflorescence terminal, erect, solitary or more commonly 2 to 3-clustered, 5 to 8 cm long, exceeded by the foliage; peduncle strict, slender, branched from above the middle, subterete, 3 cm long; branchlets relatively short, subtended by small bracts or mere bract vestiges, paniculately rebranched flowers usually few clustered toward the distal end of th ultimate branches, all glabrous, odorless; calyx turbinate, 5 mm long, 4 mm across the truncate rims, smooth though slightly angular, dull or subglaucous green; corolla creamy white, circularly concavo-convex, caducous, eglandular, submembranous, creamy white, 2.5 mm across, inserted upon the calyx rim; stamens indefinite, strongly inflexed before anthesis; filaments filiform, the longer ones 4 mm, the inner ones much shorter, pointed at apex, cremeus; anthers pale yellow, 0.25 mm or less across, orbicular, emarginate at base, laterally dehiscent, these hyaline cell walls spreading after anthesis; ovary deeply imbeded; style terete, much thicker than the filaments, tapering toward the apex; stigma small.

Type specimen number 14031, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Collected in humus covered damp earth among large stones along the wooded Catagan creek flat at 3500 feet altitude. "Langawisan" in Manobo. Dedicated to *O. F. Baker*, classmate at Standford University and now professor of agronomy in the College of Agriculture, University of the Philippines, Los Baños.

The leaves are very similar to those of *Eugenia livida Elm.*, but otherwise entirely distinct.

Eugenia urdanetensis Elm. n. sp.

Lax and suberect under shrub; stem 5 cm thick, 3 to 5 m high, branched above the middle; wood hard, br except the thin outer white portion, without odor or ta bark smooth, yellowish gray on the surface, nearly testaceus otherwise; main branches spreading, crookedly rebranched; twigs divaricately disposed, very smooth, terete, dull brown when dry. Leaves opposite, descending, coriaceous, shining green above, relatively yellowish green beneath, curing dull reddish brown, entire, the quite abruptly acuminate to caudate apex recurved, base rounded and auriculately lobed, oblong, 2.5 dm long by 8 cm wide; petiole 3 to 5 mm long, very thick, fluted above; midrib deeply caniculate above, prominent beneath; lateral nerves 17 to 20 pairs, straight, divaricate, also prominent, their ends united and forming a strong submarginal vein 5 mm below the edge, the oblique cross bars numerous and rather fine. Inflorescence terminal, upon a single peduncle or occasionally 2 to 3-clustered, 1 dm long, at least the basal one half pedunculate; all the stalks subterete, dull green and glabrous, paniculately rebranched from above the middle, subtended by broad bract vestiges; flowers in small sessile clusters from distal ends of the ultimate branches; calyx obconically elongated or deep cup shaped, 5 mm long or longer, rim truncate, 4 to 5 mm across the top, glabrous, smooth or subverrucose in the dry state, subglaucous to cremeus; corolla light yellow, composed of a small calyptrate hood, 3 mm across, glabrous, smooth, the inner side obscurely radially nerved, caducous; stamens light creamy, very many, inserted upon the calyx rim but easily becoming datached, the outer or longer filiform filaments 7 to 8 mm in length; anthers subversatile, oval or broadly oblong, 0.33 to 0.5 mm long; ovary imbedded at the base of the calyx; [illegible]le as long as the longer stamens, terete, smooth, tipped [illegible]ard the pointed apex; stigma minute.

Type specimen number 13784, *A. D. E. Elmer*, Cabad-[illegible]n (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Scattered in deep sheltered forested flats along the Dalahion creek at 3000 feet altitude. The Manobos called it "Pobring-cahoy."

This is always a shrub while *Eugenia bakeri Elm.* is a tree. The flowers and leaves of number 13784 are also larger, the leaves have more nerves and their rounded bases are auriculate.

Eugenia agusanensis Elm. n. sp.

A small and slender tree; stem terete, nearly straight, 1 dm thick, 7 m high, chiefly branched toward the top; wood odorless and without taste, sappy white except the brownish heartwood, moderately soft or hard; bark very smooth, brown and gray blotched, otherwise testaceus; main branches horizontally spreading, sparingly though crookedly rebranched, the subterete twigs light gray. Leaves coriaceous, ascending or horizontal, flat or only the abruptly acute point recurved, opposite, scattered, glabrous, velvety dark green above and yellowish green beneath when fresh, curing very unequally brown on the two sides, diverse in size, entire, base obtuse elliptic to oblongish, very minutely black punctate beneath, the larger or lower lamina 2 dm long by 8 cm wide, the average one 5 to 13 cm; petiole less than 5 mm long, relatively thick and caniculate along the upper side, leaving large scars after falling; midrib raised beneath, sunken above; lateral nerves 9 to 11 on each side, ascendingly curved, also conspicuous beneath, their ends united into a submarginal line 2 to 3 mm below the edge, cross bars very faint. Flowers in small sessile clusters from the leaf axils or from the branchlets, 1.25 cm across when in full anthesis, slightly fragrant; calyx very short obconic, the buds globose and dark green, smooth, with 4 spreading calyx segments; sepals 6 mm long, united toward the base, spreading, coriaceous, the inner pair with subhyaline margins, broadly ovate to rotund, occasionally gland dotted; the widely spreading petals similar in size and shape, white or only slightly tinged with r, low, hyaline margined, minutely glandular; stamens arin-from the inner side of the calyx cavity, the outer on p- mm long, the inner ones much shorter; filaments glab and subfleshy, cremeus; anthers ovately elliptic or orbicular, 0.25 mm or less across, subbasifixed; style 5 mm long, fleshy, glabrous, terete, slightly pointed toward apex; ovary surface disk-like.

Type specimen number 14118, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered in reddish soil mixed with stones upon a densely humus covered forested incline at 4250 feet altitude of Cawilanan peak. Only seen one tree. "Pagbalayan" in the Manobo dialect.

To be compared with *Eugenia rubrivenia* C. B. Rob., but the floral parts of our specimen appear ice as large, leaf veins not reddish, and with other distinctive marks.

LEAFLETS OF PHILIPPINE BOTANY

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A FASCICLE OF NORTH AGUSAN FIGS

by

A. D. E. Elmer

ITINERARY

In the early part of July, 1912, I landed at Surigao on my way down somewhere along the Agusan coast from where an interior trip into the high mountains was possible. From what I found on the charts and other information obtained from persons who had seen parts of the Agusan Province, the highest mountains are in its northeastern part, lying in the common range forming the boundary between Surigao and Agusan Provinces in the Surigao Peninsula, south of Lake Mainit. As usual on my trips into the interior mountainous regions, my troubles had begun. After waiting more than a week at Surigao I was permitted by an order from the Director of the Bureau of Navigation, Manila, to board the Scout and to be landed at Tubay.

Surigao is a beautiful little town. It is the only town, besides the city of Manila in the Philippines, that has a fine street bordered by rain trees or *Pithecolobium saman Benth.* Another excellent feature is its sheltered deep water nook where large interisland ships can draw up to the land within reach of ordinary gangplanks. The town of Surigao is not face to face with the broad Pacific Ocean, but is rather sheltered by the numerous islets in its immediate vicinity out in the ocean. Islet Siargao is fartherest out east and is irregular in shape; Dinagat is to the north, rather long in shape and is the largest of the group of islets that belong to Surigao Province. All of those islets seemed heavily forested, the range of mountains on Dinagat possibly extending up to 2000 feet above the sea. Ornamental orchids were frequently seen about dwellings and the spontaneous dapos or air plants on the trees right in the town of Surigao indicate prevailing humidity. The country to the interior is primarily composed of low ranges with hillocks. It is said that from one of these hills near the town, a portion of Lake Mainit can be seen. A fad of not a few Surigao residents is the collecting of sea shells. I know of no other province in this archipelago yielding such varied and beautiful conchological specimens. Again, the placer gold mining and forested districts promise rich results for Surigao Peninsula.

In the stores at Surigao I noticed a several ply mat of soft straw. The natives on Dinagat make them, and to me they were rather curious and quite distinctive. I have only seen the regular sized rectangular kind. Its material seemed to me to be the same as that from which the characteristic Basay, Samar mats or rugs are made—namely ticog or *Fimbristylis utilis Elm.*, a coarse marsh plant of the sedge family. The straws are a few layers thick, straight for the full width of the mat, with free ends and are doubly stitched about a rattan strand every two to three inches. Brick red portions alternating with similar widths of the natural straw or yellowish colors are the most commonly used colors and design. This sedge or grass-like rug weaving industry at Basay gives employment to hundreds of native women. The finished products are marketed at or shipped by way of Tacloban, Leyte, just across the channel separating the two islands. These rugs are variously named Samar, Tacloban or Pula-Jana. The weave is diagonal and one ply and in it different colors are used. They are a much finer rug than the Dinagat mat or rug, square or rectangular or even circular, of all standard sizes and are colored in different ornamental designs or occasionally in solid colors*. There is a third distinctive mat made of ticog material by the natives on Bohol Island and nearby places. It is put up in small rolls, a yard wide. The weave is single and at right angles. They are never colored and are generally used for utility purposes. Many of the sails of the numerous native sailboats plying between Cebu, Mindanao and Leyte are made of this material.

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* *Amzi B. Kelly*, proprietor of HUB PHILIPPINES in Manila, handles them and can furnish circulars of information.

Judging by the many rich well established Chinese houses Surigao is quite a commercial port, and the Surigao Peninsula is a rich land when compared with the small percentage of agricultural lands brought under productive cultivation. The Chinese operate one or more steamship lines up and down both coasts and around the other islands even down to Camiguin and up to southern Leyte, around Bohol to Cebu. I have seen one of those freight steamers fully loaded with hemp, and there was hardly room left for the captain to stand and the engine to work. These intelligent and thrifty people have the best stores, buy up all kinds of crude material which the country produces and supply the local needs. One of the Chinese took me through his extensive bakery, and all their assorted crackers and biscuits had the firm name on them. All over these Philippine Islands I have met these peaceful commercial Chinese, and although representing the greater share of business they have no voice in the government.

As the Scout was steaming through Surigao Strait, the most southern portion of Leyte or Panaon island was clearly seen. It has a high range of mountains, possibly 4000 feet high, throughout its whole length. This range is very steep and in places it appeared almost precipitous, the bleak and gullied rocky flanks extending nearly to the seacoast.

The northern end of Agusan Province southward along the coast the geology, judging from the vegetation alone, presented an entirely different aspect. Here is a low worndown range which has a series of conical mountains, the highest of which no doubt extends over 3000 feet in elevation. This entire range is heavily forested from the coast. Here and there new clearings were just being made along the fertile little flats. Quite near Tubay the southernmost point of this coastal range terminates.

Having paid for my fare and luggage, besides a bill for the steamer to come to a brief halt long enough to unload me on the sand beach, I was landed at Tubay. The day was hot and the town looked desolate to me. After my luggage was housed in a Chinese store, I began to reconnoiter the country for trails into the interior up to the base of some high mountain. There were no trails, only bancas on the Tubay river to Lake Mainit, and of course, those plying up and down the seacoast. As it took a few days to row up to Lake Mainit and the price being prohibitive for me, and since I could not be assured of a working base I did not go. Instead, I wandered southward along the coast to Cabadbaran. From this town the high mountains appeared just as near, and as it with its surrounding country is five times the size as that of Tubay and vicinity, I thought best to take my chances from Cabadbaran. The inhabitants of Tubay are mostly commercial Chinese and they treated me most hospitably. They provided bancas for me, had all my botanical supplies put into them, and after refusing pay for my stay with them they filled my coat pockets with crackers and wished me a safe arrival at Cabadbaran. The sea was placid and after a few hours poling along the coast line we arrived at Cabadbaran.

Originally the Chinese were more numerous in Cabadbaran where they were persecuted by the natives, their stores being burned and even their lives were threatened. So they moved to Tubay for safety. Even at that place only recently a few of their stores were burned by their enemy. There is a feudal relation between the Chinese and Filipinos in this whole section of the country, and yet if the property of the Chinaman is not destroyed and his life spared, he will succeed in his commercial relation with them.

At Cabadbaran I made myself at home with *Mr. Clyde MacMillan*, the supervising teacher. The municipal authorities were accommodating and allowed me to store my outfit in their building. In this town there was a Swiss planter by the name of *Mr. Sanch* who gave me a great deal of information of the valley country southward toward Butuan. He was the road master at the Cabadbaran end of road construction between Butuan and this town. I have been told that Surigao and Agusan Provinces contemplate the ultimate construction of a good Wagon road from the capitol of Agusan Province diagonally across the Surigao Peninsula by way of Lake Mainit to the capitol of Surigao Province. Such a road would greatly increase the productiveness of both provinces. Lake Mainit is a large body of water and its surrounding country has good agricultural possibilities. It is said that the lake is full of crocodiles and is a most prolific place for wild ducks. There is a broad valley from Cabadbaran extending straight to the interior. On both the south and north sides of this valley are high mountains on the western side of the low range dividing the provinces. The mountain that appealed strongest to me was located to the northeast of Cabadbaran. This mountain some call Mabaho and others Urdaneta. Mount Hilong-hilong was a little to the southeast, and, although it appeared to me a trifle higher it had considerably longer slopes than Urdaneta, and its summit region appeared rocky while that of Urdaneta was covered with dark green forests. After a week's reconnoitering for headquarters at the base of either of these two mountains, I wondered what the lay of the country was opposite them from the Pacific coast side, or, on clear mornings when the mountains on Camiguin Island loomed up most interestingly, I would unconsciously turn my thoughts in that direction. But as I have said before, I have come to Cabadbaran to take my chances. It was at this unsettled state that *Sr. Andrés Atega* did the most for me. This gentleman is a most democratic and progressive Spaniard and controlled the bulk of commerce in Cabadbaran. He told me that years ago he chased criminals over an old hard trail near the base of Mount Mabaho or Urdaneta, and that he was told that recently some Manobos had settled in that region, but that he did not think that I would want to go there. I asked him to provide me with a guide to the place. He then provided two saddle horses, and we, with a policeman, started out. It was only about seven or eight miles out, but the last mile or two we had to cut our trail. We finally came upon a small old clearing with two Manobo houses and a few palm-leafed shacks densely surrounded by tall forests of *Dipterocarpaceae*. The location was right at the base of the mountain and I told *Sr. Atega* at once that I would make that my headquarters. Then he and the Filipino policeman told the old Manobo living in the larger of the two houses what I was going to do, and that they must provide me with such labor as I may be in need of. They willingly gave up the whole house to me and my Manila muchacho or servant and agreed to aid me in every way possible. I told them that I only needed the basement and a place large enough for my sleeping cot in the house with them, and one laborer. *Sr. Atega* ordered my supplies transported on the backs of carabaos or mud buffaloes.

To arrange for a drying place, we had to take out most of the posts from under the house and brace it from the outside. One or two beside its open windward side were walled in with palm leaves and coarse grass. A few work benches were made of poles tied together with rattan or bejucos, and I was ready for work. My servant did all the drying for me at the house while I preferred to have a Manobo to accompany me in the field.

When I was in Cabadbaran, the presidente told me that they were trying to induce the Manobos to build permanent settlements, one at Bayabas, the place I had selected for my headquarters, and we agreed to use our mutual influence in that direction. A house was to be built for each of the half dozen families. The house in which I lived was a new one and a characteristic beauty from the outside and was wholesomely cool. Its dimensions were about twenty-five by thirty feet, and was about six feet above the ground. Usually they are much higher from the ground. One of them further in the woods was twenty feet above ground. The main posts are of hardwood poles, but they put in many other poles as posts and as cross braces from the ground to the floor. The floor is of split palma-brava, as they call it, and is composed of two parts. The central portion fifteen by twenty feet was about ten inches lower than the five feet wide rostrum portion which extends clear around the house, except a square break in one of the rear corners for the cooking place, and the middle front portion for the stairway. The stairway in front of our house was of the better kind made out of round cross pieces. The poorer shacks have only a ten inch thick log notched for steps set up from the ground into the door way. Even our good house had this kind of steps at the rear of the fire place. The cooking room floor is about five inches lower than the middle or main floor. For the edges of the rostrum floor, both around the inner and outer open sides, are neatly finished poles extending an inch or two above the floor level, making it very easy to pass over. The open side portion between the lower and upper floor is neatly closed up with softwood planks, giving the inner place a closed appearance and incidentally shutting out exposure from under the house. One, two or even three of the sides of the house which are only about four feet high are closed up either with horizontal or vertical planks. These walls always taper outwardly toward the top. For windows they leave the upper plank or two out if the planks are horizontal; otherwise a one by one to two foot window is left in the construction of the wall. Only occasionally a partition wall is built across the rostrum. This rostrum floor is used for sleeping quarters and light house work by the family. The edge of the inner rostrum floor is used for seats. On several occasions I have seen every inch of this space taken, the central floor being occupied by the speaker or performer. The roof of the two main sides are longer and steep, the two narrower sides of the roof dove-tail into the ends of the apex a foot and a half below the upper edge, thereby leaving a triangular opening at each end and through which any of the inwardly passing smoke may readily draw out. At each end of the roof top is a six inch wide by four foot long upwardly curved board whose edges are ornamentally carved. That portion of the roof over the central floor is steep, curvingly changing into the flatter outer portion. The eaves are rather wide. Rafters are of slender poles. Across these poles are laid bunches of three or four palm leaves four to six feet in length whose leaflets are carefully turned to one side. These bunches are four to six inches apart and make an absolute rain tight and very cool roof. Here and there in between these rafters and leaf bundles are strips of flat wood with ornamentally carved edges. Even the exposed or free edges of the walls or partitions are carved. Wherever quantities of rattan is used for tieing in exposed easily seen places, it is peculiarly interlaced in an ornamental fashion.

The kitchen room has a small square filled with clay or earth and provided with stones. Their cooking utensils, such as clay pots and iron vats are set upon the stones, while iron kettles with handles are suspended by wires or rattan.

Most of the staple foods of the Manobos are camotes or sweet potatoes, corn, squash or gourds, forest fruits, a diverse lot of greens, and lumbia. They have no rice except as a luxury at a feast or fiesta. In their fields I have not seen a single banana tussock nor a coconut tree. Between August and September they had an enormous crop of lansones in the low mountain range between Tubay River and the coast. Every day for a week or two we had bushels of fine fruit of this *Meliaceous* tree to eat. A striking example of greens are young camote leaves, and as an uncooked vegetable are the stem buds of wild palm trees. Salt fish they do not seem to use, though they eat most ravenously all wild animals. They have a few chickens and razor backed hogs, but no other domesticated animals except the numerous dogs and one or two cats.

One day an old man captured a monstrous lizard, a yard long. Just as he was ready to plunge it into the boiling water for cooking, he held it up by its tail and asked me what portion I would care to have. The animal was not dressed in the least, otherwise I certainly would not have objected. I thanked him for his hospitality, with an explanation that it was the custom of the Moros not to eat hogs, that the Igorots eat dogs and that it was the American habit not to eat lizards.

On another day one of their good dogs chased a wild hog and the Manobos captured it with their spears. This animal was properly dressed for cooking and the natives served me with a liberal quantity. This same old man came up to me, and, I could see that he was anxious about something. After a long talk, trying to understand each other, this peculiar thing was revealed. I usually used vinegar on my canned meats. Now it was his firm belief that in case I used vinegar on the hog meat they gave me, their dog that chased the animal in the woods would die. Of course, I conceded to his wishes.

During this time of the year things were dry, and along the creek beds among large bowlders were stagnant pools of water. These usually contained eels a yard long and three to five inches thick. I have seen half a dozen of them fished out of a comparatively small but deep pool. The Manobos stalk around the water until they can grab an eel and throw it on the bank before it can wriggle out of their control and slip into the water again. These eels were good eating.

The water for drinking and cooking had to be carried from a spring over a half mile away. The Manobos used the long bamboo receptacles for carrying water across their shoulders. For laundering and bathing purposes I had to go twice as far up to a streamlet in a very densely forested and humid gulch winding its course down over sandstones. It was in this place, while bathing, that I discovered the new large leafed and very watery *Saurauia succulenta Elm.* Only one tree was seen. The natives have no need for laundering their clothes, and I have never known them to bathe During heavy tropical rains their children would go out and enjoy themselves. The playfulness of the children is well preserved in the youths, and even the old folks are quick to enjoy jokes.

Here among these Manobos, members in one house would talk with members in another house and often they would carry on long and strenuous arguments. I have seen a few instances where the argument was terminated by one of the parties snatching his spear or bolo and rushing for his opponent. At those moments other natives are on hand to prevent a clash. One of these quarrels was between *Felix*, the head of the most civilized family in the community, and the old wife of the priest. *Felix* started for his bolo, but his clever wife already had it in her hands and kept him from getting it. He then ran to a second and third house in search of a spear or bolo, but those weapons were carefully guarded by the other natives. He was sweating and trembling with anger. I called to him and requested him not to do anything criminal, and he finally consented to drop the matter out of deference to me, but he fiercely denounced the old woman as the worst of all the Manobos and who should be killed.

The wearing apparel of these people is made of coarse hemp cloth or cotton goods. The cotton threads they buy in Tubay and the women do the weaving. One end of the frame on which the fabric is attached is fastened to the wall, the weaver squats on the mat covered floor and the other end of the frame is attached to her body. The finer pieces of clothing are usually embroidered with colored cotton threads or yarn in a mosaic fashion. The Bagobos in the Mount Apo region sewed colored beads on their better wearing apparel in a similar fashion. The women wear jackets and sack skirts, with strings of colored beads about their necks. The men wear short pantaloons, occasionally jackets and usually blackish armlets or bracelets braided out of nito which is a species of *Lygodium*. All the men have bolos and spears, and are the chosen of the Lord. They wear knapsacks on their backs when they travel. In these they carry trinckets of short polished bamboo tubes beautifully carved on the exterior. In some of these they carry lime for their betelnut chewing. At their sides they carry one or more of small boxes woven with fine rattan strands and then thouroughly pitched or tarred on the outside to make it impervious to rain. These contain betelnuts, tobacco leaf and the like. I have seen the native split open a rattan or bejuco stem twenty feet long into four, six or eight strands, according to the thickness of the specimen, dressed each of the strands and then carefully braided them into a rope which was terminated at one end by the solid rattan stem and the other end was carefully made into a loop. These ropes are likewise made impervious and are used as snares for catching deer. In their houses are many other crude articles. Round or nearly square receptacles made of bark. Hollowed ends of blocks of wood and sets of very hard and heavy wood pestles for hulling or pulverizing purposes. These natives as well as those in the mountainous sections of the Davao gulf region always possess more or less of old Chinese imported crude ware. Their table was a slab of a tree buttress and their cooked camotes with other dishes of greens were placed on it. Then the natives circled around it on the floor for their meals. I was always amused over the fierce competition they encountered with their dogs who crowded in between them and frequently stepped or jumped across the table set with food.

All wild tribes have their priests, either men or women, and even in this small settlement there is a pagan priest. The priest in this community had two wives, one an old woman of his own age and the other a young woman. Others were not allowed to have more, because of the American government. This priest as well as two other families of this small colony retained Manmanua slaves. It was my custom to send someone to Cabadbaran every Saturday or Sunday with a bundle of dry plants. This old priest was always on hand for this light work, and I proposed to pay him thirty centavos upon his return of each trip. He would not have it that way and asked me if I could give him an order on *Sr. Atega* for one third that amount in money for each trip. I learned afterwards that all he wanted was enough cash to make him drunk in town. On clear warm days the men loll around the cool edge of the rostrum floor like carcasas. The women and children do most of the field as well as all the house work. Why should the men work?

The Christian Filipinos across the Minusuang river are also poor, have families, and besides making clearings for their food plants they set out every year a little in hemp and coconuts permanently. These Filipinos who are mostly Boholanes have heavy road taxes and other government obligations to perform. They have left their overpopulated home islands and have started with thrift to make their home in a new place. It is interesting to pass through this pioneering section of the country. Everywhere one finds small shack-like homes and work begun in clearings, and during this dry season a great deal of burning was done. At noon and toward the evening one can hear the bugle-like call for the laborers to come in on the larger and older plantations. This call sounds very much like the whistle of a small steamer far away. The Boholanes break the end out of a large marine shell and use the conch for a trumpet. Quite often the natives of Bohol would come in their vintas or sailboats and peddle their goods, such as cloth and the like. The peddlers run all over the country, and once or twice they dropped in at Bayabas. The Manobos are eager to buy their cloth, but lacked the money. Just once I banked them with a little cash for which they solemnly promised to work. This trust on my part was a distinct mistake.

Again, the Manobos have a habit of roving to where there is something to eat. On a few occasions part of the men folks at Bayabas or whole families would go off for a week or so to some place where there was a fiesta being held. Idleness makes possible more than one of such pernicious habits. The Christian native cannot. do so, for he has a house, field and a few animals to consider. I have always found the so called wild-tribes perfectly rational and able to work as well as the settled Christianos, and why they do not is a mystery to me, unless they prefer being absolutely free of any incumbrances or independent. They know right from wrong as well as I do. Whatever advantages the valley dealer took of them and their few products, the wild man had and exercised distinct advantages over his Christian brethren. When one considers the whole matter from both sides, there seems to be very little reason for taxing one class and not the other, except that the government can get at the one and not at the other.

My work proceeded very nicely until the Manobos went on a strike, because I fed them only on their accustomed rations. They wanted rice and salmon, the same as José my Manila servant was eating occasionally. Still I was winning my way with them. Every night they would come in the house for a few cigarettes. I had a little German made tin petroleum lamp. Before, they used to sit around the fire place or torch made of the resin of *Canarium* or of *Agathis*, but now they would crowd around my lamp. After buying for them a couple of peseta lamps, I began to be known as their Teniente de Bayabas or President of Bayabas, for up to this time they had no governmental official head. I took advantage of my dignity and ordered them to clean up around their houses. I secured some paper pads, lead pencils and a primary chart reader from the local head teacher at Cabadbaran, and started a night school for them. Although I was most too tired to do this extra work for them, yet it proved distinctly to my advantage. They would come in with a fresh pair of pantaloons, with a coat or jacket on, and by and by would come washed and even slicked up. It gave me a prestige, and in cooperation with the municipal authorities at Cabadbaran I managed to keep them at doing something. Only twice I had to call for the police to give them fair warning to lay off on their lazy indolent habits.

When I left, there were seven nice buildings in rows with a wide street between, not promiscuously scattered as they wanted their houses placed.

Bayabas is a mile or two north of the dry Minusuang river bed, at about 750 feet altitude and as already stated among heavy more or less mixed *Dipterocarpaceae* forests. It is a favorable place for the red headed birds. Besides being diurnal in habit I used to hear them cluck together in the night time just before dawn.

In the forests of the mountains are two kinds of honey producing bees. The ordinary bee in the hollow of trees or in cliffs, and the large black hornet-like kind whose nests hang from the limbs, preferably from those of tall trees. The nativess would always give me the honey while they preferred to eat the grubs. The Manobo then cut off the outer sheath of a *Pinanga* or other alpine palm tree, sliced and trimmed it, doubled it up into a squarish receptacle and sewed together the upper edges of the corners with bejucos or vines. Our surplus combs with honey was carried home in this improvised bucket. These receptacles were quickly and neatly made and would hold water.

At another time we were far up the mountain along a dry forested ridge when we came upon an old dead tree whose decayed bark and wood had accumulated on the ground around the trunk. My Manobo companion was delighted at the signs, slung his cargo off his shoulders and started to scratch down into the debris of the rotten bark and wood. He dug down nearly his full arm's length and hauled out two large ellipsoid eggs. We had no water to boil them. The Manobo then rolled the eggs in succulent leaves and placed them in the middle of a pile of green palm leaflets. He then covered the entire pile with dry foliage and set them on fire all around. After a few minutes he took the eggs out and they were beautifully roasted clear through and had a fine taste.

Half a mile to the east of Bayabas is the Catangan Creek which finally empties into the Minusuang River, and about three miles to the west is the Dalahion Creek. There were minor streams coming down the mountains and coursing through the heavy forested flats. Immediately back of the little settlement of Bayabas was the beginning of a forested ridge which led directly northward up to an elongated knoll called Giwantanan. From this knoll the ridge curved eastward and made a steep ascent up to 4000 feet forming the peak called Duros. From Duros the ridge continued northward and descended at least 500 feet. In this depression was an abandoned clearing and an old Manmanua or hunter's cabin. To the right of this ridge from this cabin is a splendid spring, the beginning of a stream flowing down toward the Catangan Creek. On our left and three times as far down as to the spring on the other side was the Dalahion Creek. The trail continued along the ridge to the base of another very high peak called Cawilanan. On this peak the trail was very well marked, but the basal climb was nearly precipitous, the middle portion of it was quite even with short level or nearly level stretches. Toward the summit it was again rather steep and measured 5000 feet in height. After passing Cawilanan Peak the trail for a mile or two followed a gentle descending grade northwards into a densely forested humid depression or basin, in the midst of which was a ten acre lake. This looked weird to me. My old native companion called it Danao, the Visayan name for lake. So I named the lake, Danao. The clear cold water was bordered by a dry turf twenty to thirty feet wide around it. Behind this turf was a dense jungled fringe of trees of *Pandanus radicans Blco.*, the front ones rather low and stunted, the rear ones nearly as tall as the dense mixed forests backing it all around the lake. Across the lake over the forests the summit peaks of Mount Urdaneta appeared rather near. However, we had to cut our trail up to the ridge to our right and soon we were on one of the summit peaks.

Possibly I have given the reader the impression that my work up to the summit was easy and quickly accomplished. It was just the contrary. I had to battle with the Manobos over a month before I found my way up to the hunter's camp even. The older natives repeatedly told me of the lake and the Manmanua shack up in the mountains. The younger men who would accompany me in the field would swear that they always followed the creeks when they went into the mountains and no where along the forested ridges could I detect a beaten path. So I made up my mind to begin cutting a trail along the main ridge little by little each day while collecting. The summit of Duros Peak was the most difficult. I have never seen woods more thickly infested with spiny rattans and climbing bamboos. On Duros I was at a loss as to which direction to proceed. The woods and forests were so thick, I could barely see the bluish mountain range through the limbs ahead of me. Twice I started to cut trails northward, only to find myself in the wrong. Finally a third direction was started and I found myself upon a small ridge which led out into the deserted Manmanua field and their cabin at the upper end. From this point up to the lake the trail was well marked, though from the lake I had again to cut my trail along the ridge to the summit which alone took a couple of days. But I had my bearings and it was only a matter of working straight to the point. The Manobos knew the lower region perfectly, though they tried to mislead me continually. Later I found certain stretches of their own beaten trail across difficult places, though most of the way through the forests they meander about without trails. The Bagobos in the Mount Apo region are quite different in this respect. I have always found the wild people as reluctant as the Christian Filipinos to climb the higher mountains. Not because of superstitious fears but rather because of the cold clammy climate and necessary physical exertion. And after winning my way with them to the summits, they felt that they had been conquered.

In the above paragraphs I have used the word Manmanua for a people. They are the most primitive in northeastern Mindanao and inhabit the higher interior regions only. The few I have seen were rather tall or slender, are practically black and have curly hair. They no doubt represent the Negritos in this region, and they have a distinct dialect different from their Manobo masters.

All of the three or four summit peaks of Mount Urdaneta are rigidly wooded, the gentle depressions in between are very humid and thickly forested. The highest one is fartherest out, and I should judge is 6500 feet high. From a treetop I could see grand views in between the rapidly fleeting clouds. The white coast line of northern Mindanao washed by Surigao Sea seemed at our feet. The Agusan River appeared as a silvery line, and the grayish white Minusuang River bed could be traced almost into the dividing range. Tubay River could be seen nearly to Lake Mainit whose upper edge only was seen on account of the rather high ranges extending northward from us. Over to the east was seen a high range, possibly as high as Mount Urdaneta, and appeared separated from our group of mountains by a deep broad cañyon. I could not learn of its name, and it may be Mount Legaspi or Mount Urdaneta proper. If it is Mount Urdaneta, then our 6500 feet high summit peak on which we stood should be classed with Mount Mabaho. But the Manobos and well informed valley people call the round massive peak or mountain nearest to Tubay and Cabadbaran Mabaho. From our view point it was considerably below us, and we could see Tubay directly over its summit. From the summit of Cawilanan Peak, Mabaho lies eastward across the Dalahion Creek cañyon, and seemed a trifle higher than Cawilanan Peak or 5000 feet. The Manobos say it is quite easy to pass by way of Lake Danao in a curve on to its summit. I never went there, but since my trail from the lake up to the summit region of Urdaneta gave out, I can readily believe that it leads from the lake along the densely forested broad ridge to the rounded similarly forested Mount Mabaho. The Manobos have no desire to go up to the cold moss laden and wind swept summit of Urdaneta, but in the dense forests of a somewhat lower or in sheltered regions they do travel in search for rattan, bees, hog and deer. Rattan or bejuco and bees wax are their main products of trade with the Chinese at Tubay in preference to the Filipinos at Cabadbaran. From 6500 feet altitude, Mount Hilong-hilong to the south seems a trifle higher, say 500 feet, giving it a 7000 feet elevation.

Dalahion Creek is the outlet of Lake Danao and flows directly toward Cabadbaran into the Minusuang River between Mabaho and Duros and Cawilanan Peaks. Catangan Creek arises from somewhere east of the Urdaneta group. Mount Hilong-hilong is nearly south or a little to the southeast of Urdaneta and is completely separated by a valley extending clear to the low dividing range which is said to be closer to the Pacific Ocean than to the Surigao Sea. It has quite an elongated rocky crest, tapering toward the south though highest and abrupt at the northern end. From the Surigao coast its side view appears in the shape of a nose, and in the Visayan dialect Hilong-hilong means "like a nose." Mount Mabaho has also a reason for its name. Long time ago, it is said, that two English or German prospectors undertook exploration work on that mountain. After not returning for some time, the townsmen or Visayan went out in search for them. They finally came upon their camping place and found their dead bodies—the result of tropical fever. The air was heavy with vile odor, and the Visayan present frequently expressed this condition in their native dialect "Mabaho." Ever since the mountain was called by that putrid name. Mount Urdaneta the Manobos call Masay, but I could not obtain its meaning, unless it expresses a wet cold and windy place.

Besides the crude trail leading in from Cabadbaran to Bayabas there is a trail leading through the dense forested flats along the base of the mountains from the upper Minusuang River to Tubay on the coast. Again, besides the ridge trail from Bayabas to Mount Urdaneta, there is an old alpine cross trail intersecting the ridge between Duros and Cawilanan Peaks at 3500 feet altitude or at the Manmanua settlement. To the east of this point the trail leads partly along the upper portion of the Catangan Creek and then clear out to the Minusuang head waters. To the west this very obscure trail descends into the Dalahion gorge and follows its stream out into the valley towards the Tubay River. The lower cross trail is bad enough, but the upper one is practically unrecognizable, although it represents a possible mountain passage.

The officials at Cabadbaran exerted quite an influence upon the Manobos, and on my behalf twice sent the captain of the police out to Bayabas for inspection. In the few months of my stay, they built several houses and opened a broad road through the dense forests from Bayabas to the Minusuang River or into the beginning of the valley. This latter piece of work had a most civilizing and taming effect on them, for they all realized that they were placed at the hands of the municipal authorities. For a long time they stubbornely refused to open this road and a threat for arrest had to be given them. Again, the presidente gave them orders that they must supply me with one or two laborers—I to provide them with food and pay them weekly wages. Their services, however, were most exasperating. Nearly every morning I had to rout them out of their sleep for breakfast, or perhaps they had already slipped out into the woods in hiding. I had to take them by weekly relays, for even the best ones could or would not stand the work longer.

In September they all quit working for me. The weather was most beautiful. All the Manobos were relatively quiet and seemed in a reverential state of mind. In the evenings I heard the priest pray, and then they informed me that they were going to have a feast or fiesta. After a few days, the family of the priest vacated his house and he was praying at intervals during the day time as well, both in the house and upon small alters which he had built in the woods nearby. On the fifth day nearly all the Manobos congregated into a third house and were practically mute, except the priest who at this time transferred his functions from his residence to the festive house, and was praying louder and more incessantly. The following day an alter was built in front of this house with some palm leaf decoration over it. The priest continued his frantic and weird performances that made my hair stand on end. The next morning a hog was carefully tied on its side on the pole platform under the palm leaves. Then the priest came out of the house and danced with his polished spear in a most fantastic style about this animal offering and called upon the Gods with all his voice. He was in a dead sweat and was followed by two or three younger Manobos carrying spears. Finally he stopped and placed his spear point upon the heart side of the animal for an aim, raised it and plunged it into the hog. Then I saw the most revulsive act of the ceremony. As soon as he extracted his spear he planked his mouth upon the blood gushing wound of the hog, and it seemed to me that he was gorging himself with the animal's warm blood. When he let go, his face and neck was blood stained and trickling with it, and he at once entered the house. The boys also stuck their spears into the animal but did not put their faces upon the wounds. The dead hog was then removed to the rear of the house where it was properly prepared and cooked with other things. After this I was invited into the festive house, and dancing and eating and merriment had begun. The priest's work was performed, while the dances were continued by the others a day or two longer. The solitary dancer would dance in the central floor, the visitors sitting around the rostrum floor step, while here and there on the rostrum were squatting groups of natives eating. A boy played a crude deer skin drum, another whetted a pair of sticks, one or two fingered on native banjos and an equal number were beating small agongs. The dancer put on a red mantle, hung slices of meat over his shoulders and around his arms, or with a plate of food upon the palm of each of his hands, or with a jug of something good to drink on his head, danced in a contortionate manner until he was worn out and wet with perspiration, or until some one else relieved him. He was also praying or calling to their Gods to accept their offering, and their feet hit the floor so hard I could hear them reecho in the woods. As soon as there was no more to eat, they resumed their daily routine work, play or loafing, and group after group of the numerous visitors departed. In those moments when the wild people or pagans begin to feel the necessity of a sacrifice and confer with their priest of their need, I have always felt a little uneasy, although not cowardly enough to clear out of the country. My view point is this, that for certain misfortunes it would be easy for them through the aid of the priest or priests to become firmly convinced that my presence among them is the direct cause for the displeasure of their Gods, and consequently some action against me might be instigated.

During the middle of October, I, with two Manobos went up to the hunter's cabin at 3500 feet altitude and located between Duros and Cawilanan Peaks. From this place I could work the upper region and every other day I would send my collected material down to Bayabas for drying. During the first week of my stay a most hurricane-like typhoon swept over the country from the northwest to the southeast. For four to five days it rained most frightfully and the wind blew a powerful gale day and night. We dared not venture into the woods on our way down to Bayabas, because of the falling limbs and trees. By day we could see them and by night we could hear them break and fall. There were some big trees near our cabin, but the least dangerous ones luckily were on the windy side of our small cabin. This small abode of ours besides the rear little fireplace had scarcely room for us to stretch out in, and to keep dry under a leaking roof we kept fire agoing day and night. As much as we could brace it against the storm, it still swayed and at any moment we might expect it to be unroofed. We could hear the Dalahion and Catangan Creeks roar, especially the former. After the wind subsided we reopened our formerly cut trail down toward Bayabas, and in most places our old trail was covered with trees and limbs blown down and in other ways the rattans and climbing vines sunk down over into it. The weather cleared up beautifully and we again proceeded to alpine collecting from the upper camp. Every where we went we had to cut out anew our trail, though it was interesting collecting from the ground of such trees whose limbs and trunks were broken down by the storm, and of such epiphytes as were torn loose from the tree tops and thrown to the ground. The woods and forests along the ridge above and around Lake Danao as well as along other ridges seemed stripped and even crippled. It was a pathetic sight to behold them in comparison to the solid mass of a healthy green they were before the destructive storm. Lake Danao had risen ten to fifteen feet and extended far beyond into the dense forested flat. The Manobos complained of sore feet from the spines they encountered on the ground everywhere, and after changing a few of the men every other day I finally had to give up my alpine collecting.

When I returned to Bayabas there were inquiries from Cabadbaran concerning my safety, and even after ten days after the storm ceased the Minusuang River was very high. It certainly had torn up its banks and practically changed its course in places, flooding Cabadbaran so that they could row into the municipio with a banca or native row boat. *Sr. Atega* told me that in all of his twenty year's local residence he never had seen such a storm and flood. He could hardly believe me when I told him that I had been penned up in the mountains during it all.

During the dry months the natives did not hunt or trap the wild hogs, although they were numerous. They said the rainy season is the time for hunting. I first thought it was for the protection of the young, but I soon learned that in the rainy season the hogs were much better eating. Toward the last of my stay in the mountains I collected a number of oaks with large and abundant acorns, and my Manobo companion always informed me that they were exceedingly good chow or food for the hogs, and since many of these trees were coming into fruiting state at this time, I could understand that by the rainy season from November to February the hogs were practically fattened on the acorns. See volume VI, article 100 of these Leaflets.

The Manobos, like the Bagobos, prepare two kinds of traps—the latch and spring trap and the stockade kind. The latter kind consists of sharp pointed bamboo steaks driven slanting into the ground at the bottom of small gulches across hog runs. When the hog runs into them with his full force he is usually wounded fatally. I was told when the traping season began each Manobo had a certain district, and no tresspassing was done. They have a great fear themselves for their traps, for the sharp bamboo points or spear arrows are frequently poisoned. The latch and spring trap or balatic as they are called, drive the bamboo arrow clear through a hog or deer.

Around Bayabas and even along the Minusuang River there are but very few bamboos. During my three month's stay I confined my collecting in the dense and humid forested flats, along the wooded ridge up to Lake Danao and along the Catangan Creek. Very little was collected in the valley which I planned to explore later in the season after the rains had started. The frightful storm and its effects paralized my activities, and I decided to leave, knowing that in the field there were many plants I would like to have added to my collection still.

The writer has always found the ridges and gullies just below the real summits of our high Philippine mountains the richest and most productive of vegetation. The plants in this altitudinal section all appear to need high altitudes yet the real summit exposures seem too severe for them. Therefore, they seem to cluster around the summit in partially sheltered places from certain directions. Here they are densely crowded, interlacing and even lying on top of one another and extending down hill and just outward and upward enough to secure a portion of the sun light and clear air. Every mountaineer knows of the difficulty in cutting his way through this section of the Philippine alpine vegetation, and the necessity of getting down on both hands and feet in order to crawl through the limbs and roots or along the stems that lie close to the ground, or as it frequently happens one can walk over the tops of the shrubby trees. On these ridges and in the intervening gulches are great mixtures of plants, and every ridge and gulch leads its local interest to the botanist. The flowers or fruits are not easily seen from beneath, and frequently I climbed the higher trees in order to secure an oversight and to spot or locate flowering or fruiting specimens, and even then how far can one see or detect the inconspicuous small flowers and fruits? And how often do we go to the summit for successful collecting and how far around the mountain peak is it possible for us to go, or how much time have we to explore every individual ridge and intervening gulch or ravine?

The rattans, like the oaks, were just coming into fruiting state. The Manobos recalled to me over thirty five different kinds, yet I have barely succeeded in collecting one half of them. In the Lake Danao region or in the mossy forests at 5000 feet altitude is a fine species whose stem is no thicker than a slate pencil. There are usually several stems of this species from the same root cluster and they dangle about like wires. In this same region was a tall tree climbing rattan whose old stem measured an inch in diameter. Its rank, repeatedly branched five feet high infrutescence was loaded with one half inch thick perfectly globose purple red mature fruits. The whole infrutescence appeared in the tree tops as a mass of red flowers and could be seen long distances. The summit region of Duros harbered many spiny plants. The Manobo name Duros has some reference to spines. One of these was a very coarse rattan with a four inch thick old stem. I have never seen such a thick stemmed species and it was only observed on Duros. I failed to detect either flower or fruit on it.

On the limbs of the big trees of Cawilanan Peak is a large aerial| *Fagraea epiphytica Elm.* whose fully grown fruits were nearly five inches long and three inches thick.

In the town of Cabadbaran I collected for the first time *Mangifera verticillata C. B. Rob.* The mature fruit was yellowish in color, four inches long and two and one half inches thick, cylindrically round, not flattened as our other mango fruits. Its large seed was similar in shape and quite fibrous, the threads ramifying throughout its doughy white meat. The foliage and *Cerbera odallum*-like fruits strongly reminds one of *Apocynaceae.*

The forest flats contain a sufficient stand of *Dipterocarps* for a saw-mill. Some of these trees grow in alpine and subalpine regions. There were many of these splendid trees about our settlement and their flowers sweetly scented the entire country. Frutiferous trees appear reddish tinged. The brightly shining leaves on clear bright days have a soft glimmering effect. See *Dr. Foxworthy's* report on the *Dipterocarpaceae* from the Agusan region in volume VI, article 97.

In the higher altitudes while we were cutting trail and blazing trees, we occasionally scented a sweet fresh cinnamon odor. When the bark of *Cinnamomum mercadoi Vid.* was newly cut its valotile odor at once filled the woods or forests, though the green bark had very little cinnamon taste. This odorous character of this same species was perceived in other localities. The commercial mount Apo *Cinnamomum mindanaense Elm.* produces a very stringent first class bark which however has no volatile odor. When the writer was in the Mount Apo region in 1909 he collected several sacks of bark of the latter species for the Bureau of Science which made a very favorable report on it. At the same time I also brought up to Manila two dozen small seedlings in bamboo tubes, all of which have died except one which now measures fifteen feet high and has a stem eight inches thick near the ground. It stands in the Cervantes garden of this city.

In the scarcity of huckle berries or blue berries Mount Urdaneta is like Mount Calelan, a sister mountain of Mount Apo. No doubt the rocky summit of Mount Hilong-hilong harbors plenty of them, and in that respect is similar to the rocky Mount Apo summit region.

In the Surigao Peninsula are more *Nepenthes* species or pitcher plants than in any other single locality of our archipelago. On the limbs of lofty trees on Duros and Cawilanan Peaks was recollected the epiphytic *Nepenthes truncata McFarl.* only recently discovered, published and so far only known from the Surigao region. It is by far the largest pitcher plant in the Philippines and rivals *Nepenthes Rajah Hook. f.* of Borneo. The leaf blade is truncate at both ends, the larger ones are one and one half feet long by eight inches wide. The larger pitchers are equally as large.

Along the Minusuang River and along the smaller streams up to 1500 feet altitude is a big and stately species of *Eugenia*. It has exceedingly hard burly wood, and since it is commonly known by the natives as binacag I have adopted that specific name for the species in the preceding article of this publication.

Of the fifty or more of Philippine *Selaginella* species, that of *Selaginella magnifica Warb.* is by far the prettiest and should prove a great success in tropical gardens and in green houses of more northern climates. It is only known from eastern Mindanao, and near Bayabas it formed dense knee deep masses in wet compact reddish soil along streamlets in the forests at 750 feet above sea level.

In discussing the food stuffs of the Manobos at Bayabas I made mention of lumbia. This food is the dry mealy sago extracted and washed out of the pulp of stems of an ivory nut palm. It is packed in pointed rolled up sheaths of palm leaves, and is imported from the upper Agusan river region where that sago producing palm is said to be common in the half swampy lake borders. The flour is placed in a frying pan or iron vat over a hot fire. After a very little water is added it forms conglutinated masses which the natives relish very much, either hot or cold. I have come to like it myself with a little cream and sugar. In the vicinity of Mount Apo I have collected an ivory nut palm or lumbia as the Bagobos also called it, and of it have brought up to Manila for the Bureau of Science several jars of its mealy flour. Although the nuts of the Apo and the Agusan species are practically the same, the sheathes of the Apo palm are beset with numerous long spines, while those in the Agusan region are smooth. I failed to collect specimens of the Agusan plant which does not exist as far north as Cabadbaran, but I have seen a few trees along the river banks in the neighborhood of Butuan.

My return to Manila was accompanied with considerable trouble and loss of time. It took me over a week to have my supplies and material transported from Bayabas to Cabadbaran. At Cabadbaran I had to wait nearly three weeks before a steamer came along for Butuan even. At Butuan I transferred to another steamer and after a week's waiting I succeeded in reaching Mambajao on Camiguin Island. Here I waited two weeks for a steamer to Cebu. At Cebu after five days waiting I boarded a vessel for Manila. Upon my arrival in Manila I was pretty well exhausted, yet satisfied that all went well with me and my collection.

The irregular steamer service was due to the first destructive typhoon which sank a dozen or more of local freight steamers and crippled others, and which did a great deal of damage all over the southern Visayan region. The town of Malitbog, Leyte had every house in it either thrown down or unroofed. In the extensive hemp fields on Camiguin Island, one third of the hemp stalks were broken down. Floods washed out roads and bridges, and the violent high tides damaged wharfs. Bohol with its extensive coconut groves appeared little damaged. The light material buildings of the town of Cebu was one mass of debris. The island of Cebu, especially its northern portion is the poorest in the Philippines, and is therefore sometimes called the graveyard island, yet the town of Cebu does a big volume of business. The foreign commercial firms have splendid warehouses and the government built a fine whart for the city a few years ago. It is fed by the rich country of all northern Mindanao, Bohol, southwestern Leyte and practically all of Negros Oriental.

I am frequently asked how I manage about my food. Certain necessary cooking utensils with some canned provisions always accompany me, although I draw on the local country for most of my needs. One must adapt himself to the conditions as crude and even repugnant as they may be. The sudden change from the daily bread to none at all is sometimes very hard, but soon it is a forgotten desire. Never before have I taken a servant with me from Manila, neither do I need interpreters, but my greatest trouble in the field is the unwillingness on the part of the natives to work. I do not know Spanish nor even a single native dialect, yet I can get along perfectly with willing laborers. I never go out armed, but I am strictly cautious in my dealings with the natives. After any one has lived and worked among any of the mountainous inhabitants he can truly say that by contrast our rural Christian Filipinos represent comparative civilization, and in my opinion, the greatest factor in this civilization among the masses was the church. Of course, I would never go into those interior and alpine regions, were it not for my personal interest in the vegetation. At times the loneliness has been almost intolerable. Several years ago when I was in the Mount Apo region among the Bagobos I did not see an American for more than seven months. A few times I had to wait over a month for my mail. Yet there are many customs of the natives with whom I have lived and worked that can be greatly appreciated, and from an ethnological standpoint the study and discussion of their domestic lives would necessitate a first-rate knowledge of their dialect.

The study of figs in this region revealed a greater similarity to those in the district of Davao (Mt. Apo) than to those from southern Negros (Cuernos Mts.), or to those from southern Luzon or even from Leyte. The fascicle of east Leyte figs was chiefly collected in the hill country of the lowlands, while in this region my collection is mainly from higher elevations. In the low country of this province such common species as *Ficus indica Linn.*, *Ficus nota Blco.*, *Ficus hauili Blco.* *Ficus heteropoda Miq.* and others were observed but not collected. In the following list there are enumerated forty species, eight of which are new to botanical science.

LIST OF SPECIES

Key for the external characters.*

a. Palm-like shrubs............................... .Group I

(*Ficus pseudopalma Blco.*)

aa. Branched trees, shrubs or vines.
  b. Leaves tessellate beneath.....................Group II

  (*Ficus cataupi Elm.*)

  bb. Leaves not tessellate.
    c. Receptacles on tubercles from stem and occasionally from the larger branches.
      d. Tubercles lax, long and slender..........Group III

      (*Ficus minahassae Miq.*)

      dd. Tubercles rigid, thick and relatively short..Group IV

      (*Ficus nota Blco.*)

    cc. Receptacles chiefly in the leaf axils, occasionally clustered along the twigs.
      d. Receptacles sessile, ruber red and subtended by blunt bracts; leaf petioles short..........Group V

      (*Ficus indica Linn.*)

      dd. Receptacles upon long rigid peduncles, yellowish and subtended by sharp bracts; leaf petioles long. Group VI

      (*Ficus chrysolepis Miq.*)

      ddd. Receptacles with other characters except color; leaf petioles short.
        e. Receptacles 2.5 to 5 cm across, always obovoid. Group VII

        (*Ficus variegata Blm.*)

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* Copied from Vol. IV, Art. 67, P. 1235.

- ee. Receptacles less than 2 cm in diameter, nearly all globose or subglobose.
  - f. Sprawling, scandent or subscandent shrubs; leaves smooth, with or without hairs. Group VIII
    (*Ficus pisifera Wall.*)
  - ff. Shrubs, seldom trees; leaves harsh at least beneath....................................Group IX
    (*Ficus ulmifolia Lam.*)
  - fff. Trees or tree-like shrubs; leaves smooth, with or without hairs.
    - g. Leaves 2 to 3 dm long, one half as wide. Group X
      (*Ficus gigantifolia Merr.*)
    - gg. Leaves smaller.
      - h. Leaves hairy beneath; receptacles densely pubescent.....................Group XI
        (*Ficus macropoda Miq.*)
      - hh. Leaves and receptacles glabrous or subglabrous.
        - i. Leaves elliptic or oblong, numerously pinnatinerved................Group XII
          (*Ficus infectoria Roxb.*)
        - ii. Leaves cordately ovate, fewer nerved. Group XIII
          (*Ficus integrifolia Elm.*)
        - iii. Leaves oblong but not pinnatinerved.
          - j. Leaves coriaceous; syconium soft and juicy when mature........ Group XIV
            (*Ficus hauili Blco.*)
          - jj. Leaves chartaceous; syconium hard and dry........................Group XV
            (*Ficus crassitora Elm.*)

Group I

(*Ficus pseudopalma Blco.*)

Ficus pseudopalma Blco.

Field-note:—A palm-like or unbranched shrub; stem terete, nearly straight, 2 inches thick, 10 to 15 feet high; wood very soft, white, slightly sweet, odorless, with a large pith; bark smooth, light gray, whitish on the inner side, its hypodermis green; leaves alternatingly crowded toward the top, divaricate, chartaceous, lucid above, light or relatively yellowish green beneath, the marginal sides very coarsely wavy, after falling leaving blunt heart shaped scars; petiole very short but stout, yellowish brown, much thickened and somewhat compressed; figs severally crowded upon a short woody and persistent rigid tubercle, very irregular or obovoidly elongated, purplish toward the base, light brown lenticelled, the raised umbilicus very rigid and rugose, the upper figs in the cluster are young ones while the older or mature ones are crowded toward the base on the outer side. "Banangal" in Manobo.

Represented by number 13867, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Scattered here and there in compact soil among secondary woods along the Minusuang river at 500 feet above sea level.

Group II

(*Ficus cataupi Elm.*)

Ficus cataupi Elm.

Field-note:—A liana-like shrub; stem repeatedly branched; twigs numerous, relatively short, divaricate, usually curved about the limbs of its support, very wiry; leaves very rigid and chartaceous, flat but gradually curved, dull green above, beneath paler and tessellate; figs pendant upon very short stalks, usually solitary from the leaf axils, dark green, subglobose or short ellipsoid, 1 inch across, dull brown spotted. "Cataupi" in Manobo.

Represented by number 14211, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Found in the rattan infested summit woods of Duros peak at 4000 feet altitude.

Ficus megacarpa Merr.

Field-note:—Liana-like shrub; stem 2 inches thick, crooked and irregularly round, bendable, branched occasionally; wood soft, porous, reddish tinged, quite odorless and tasteless, pith large; bark smooth or finely lenticelled, chalky white mottled; main branches few and long, relatively short rebranched; twigs numerous, wiry, commonly curved and forming tangled masses; leaves rigidly chartaceous, horizontal or descending, sides curved upon the lower paler green surface; figs hanging in small clusters from the stem, 2 inches thick, globose or nearly so, russet brown and with numerous bright red spots or even blotches, upon a brown bracteate short woody tubercle. The Manobos like the Bagobos call it "Cataupi."

Represented by number 13932, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

On a dry wind swept ridge at 3500 feet altitude of Duros peak.

Not typical.

Ficus disticha Blm.

Field-note:—Lofty tree climber; stem near the ground terete, 2 inches thick, crooked and twining about its support; wood with faint concentric lines, porous, very soft, sweetish, odorless, white but reddish tinged toward the center; bark relatively thick, dark brown, densely covered with latericius colored excrescences, otherwise whitish, with a heavy flow of latex; main branches crawling along the upper side of large limbs and repeatedly rebranched, brown and lenticelled; twigs crooked and wiry, relatively short and very numerous, forming tangled masses; leaves rigidly coriaceous, ascending and but slightly recurved, tessellate and paler green beneath; figs ascending, obovoidly globose, green and milk spotted especially toward the umbilicus, upon pale green stalks, 0.33 inch across, soft and vinosus when ripe; florets light red. In Manobo "Pangoal."

Represented by number 13848, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Gathered in damp woods upon a very steep incline of Cawilanan peak at 4500 feet altitude.

Group III

(*Ficus minahassae Miq.*)

Ficus minahassae Miq.

Field-note:—Low and widely spreading trees; trunk terete, 10 inches thick, 20 feet high, branched from below the middle; wood soft and whitish; bark smooth, whitish mottled, otherwise reddish tinged; main branches widely spreading and repeatedly rebranched; twigs slender, ascendingly curved, usually provided with dry brown bracts; leaves horizontal or descending, submembranous, paler green beneath, upon terete brownish petioles; lax tubercles pendant, 1 to 3 yards long, occasionally branched; figs in globose heads, 0.75 inches in diameter, red when mature, the truncate apical portion provided with cremeus papillate lenticels, the umbilical bracts greenish in the immature state. In Manobo "Malatungbog."

Represented by number 13995, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Usually in rich soil of secondary woods among the hemp fields along the Minusuang river at 500 feet above sea.

Ficus subalbida-ramea Elm. n. sp.

A small or middle sized tree; trunk 2.5 dm thick, crooked and subterete, 10 m high, branched from near the middle; wood dingy white or yellowish tinged, quite odorless, more or less pulpy; bark smooth, mottled; main branches ascending, ultimately spreading and numerously rebranched; twigs ascendingly curved, light gray, only the young tips minutely puberulent. Leaves descending or the upper ones horizontal, subchartaceous, diverse in size, alternatingly scattered, entire, oblong, flat, the gradually acuminate tips recurved, a trifle inequilateral toward the broadly obtuse or obliquely rounded base, curing dull green on both sides, smooth and glabrous, 2 dm long by 6 to 7 cm wide at the base, the lower leaves less than one half as large and more distinctly unequally sided; petiole stout, 1.5 cm long, grayish and appearing minutely checked, glabrate; midrib raised beneath, drying conspicuously brown and usually finely strigose beneath; lateral nerves in the larger lamina 7 to 10 pairs, ascendingly curved, conspicuous beneath, the tips of the upper pairs interarching, cross bars and reticulations faint; terminal bud bract nearly chalky white on the exterior, sharply acuminate, equaling the petioles.

Receptacles alternating and hanging upon stem tubercles, glabrous, pale glaucous green, with numerous brown lenticels, similarly and much compressed at both ends, the younger ones obovoidly compressed, 7.5 cm across when old; peduncle striate, 6 to 10 mm long or longer, green, bearing 3 small bracts at the distal end, glabrous; tubercles profuse along the trunk, 1 to 3 m long, glabrous but characteristically grayish white in the dry state, grayish green when fresh, very flexible and repeatedly branched, arising in clusters from short woody excrescences, more or less angled at least in the dry specimens; umbilicus 7.5 mm across, rugose and slightly raised, the outer portion composed of broad imbricate bracts horizontally placed; the inwardly extending bracts thinner, oblong or subspathulate, 2 mm long; male flowers not observed; young pistillate flowers 1.5 mm long, dark brown, subcompressed, intermixed with the gall flowers; pedicels thick, 0.5 mm long, surrounded more or less by yellowish brown hairs of equal lengths; ovary ovate from the side view, surrounded by a perianth sheath; style nearly terminal, 0.5 mm long, irregularly expanded at the apex; gall ovary short obovoid, sessile or with a tapering pedicel, bearing a subterminal style which is terminated by an expanded stigma, similarly surrounded by tufts of seta-like hairs.

Type specimen number 13991, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered in loose red humus covered soil at the upper end of a steep densely forested ravine at 1750 feet altitude. This group of fig trees with large fruits hanging from stem tubercles the Manobos as well as the Bagobos call "Basicong."

Apparently nearest allied to *Ficus corona King.*

Ficus barnesii Merr.

Field-note:—Tree-like shrub; stem solitary or occasionally clustered, 5 inches thick, 15 to 20 feet high, terete, but crooked, branched from below the middle; main branches spreading, rebranched, the lax twigs ascendingly curved; wood quite odorless and tasteless, whitish, very soft; bark smooth, gray, covered with dark brown lenticels, freely bleeding with a thin molasses-like sap; leaves pendant, nearly flat, paler green beneath, the petioles brown; figs upon 1 to 2 yards long flexible drooping and rebranched tubercles, at least 1 inch across, obovoidly globose, deep green except the shaded nether or yellowish side, roughened with scattered dark brown small excrescences or large lenticels, shallowly sunken at the umbilicus, the upper umbilical scales grayish. "Basicong" in Manobo.

Represented by number 13868, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

This species is very common in the lowlands among secondary forests and in relatively dry compact soil along the Minusuang river at 500 feet altitude. Its figs when in the right mature state are eaten by the natives and really have a good figy flavor.

The writer has always thought of the possibility that some of our soft skinned wild figs might be brought to a state of economic usefulness. Take for instance *Ficus cassidyana Elm.* which only grows to be a small tree, yet I have seen it bear figs four inches in diameter. Other tree species of groups III and IV or section *Covellia* also have large fruits. See *Prof. Baker's* study on the caprification of *Ficus nota (Blco.) Merr.*

The fruits of this species or *Ficus barnesii Merr.* as well as that of *Ficus nota (Blco.) Merr.* and *Ficus areneta Elm.* occasionally bleed with clear watery sap, so abundant at times to form small pools on the ground. The periods of this condition are usually in the mornings following clear cold nights or after heavy rains.

Group IV

(*Ficus nota Blco.*)

Ficus satterthwaitei Elm.

Field-note:—Small tree; stem 8 inches thick, 20 feet high, branched from the middle, subterete and suberect; wood soft, sappy white, watery and heavy, with coarse concentric rings; bark smooth or roughened with lenticels, containing latex, hypodermis green, otherwise whitish; main branches ascending, ultimately rebranched, the ascending twigs green; leaves descending, submembranous, diverse in size, easily wilting and sides turning upon the upper darker green surface; fruits upon few to several inches long and branched tubercles, from the stem only; the tubercles rigid, scar roughened and brown; figs upon pendant dull green nearly 2 inches long flexible stalks, 1.5 inch across, 0.75 inch deep, dark green but upon maturity dull yellow, sprinkled with brown lenticels, the umbilical scales dirty brown or blackish. "Tabog" in Manobo.

Represented by number 13899, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Standing among bowlders of the Catangan creek bed at 3000 feet altitude.

Ficus repandifolia Elm.

Field-note for 13681:—Small tree or tree-like shrub; stem 5 inches thick, terete but crooked, 20 feet high or less, branched from the middle or below it; wood soft, sappy white, concentrically ringed, odorless and tasteless; bark mottled, smooth, ochroleucus in the middle portion, the inner side whitish and with latex; main branches widely spreading and crookedly rebranched; twigs few, ascending, slender; leaves coriaceous, radially spreading and pendant as in certain *Araliaceous* plants, shallowly curved upon the upper much darker green surface, tips abruptly recurved, veins beneath much paler green, turning dark reddish brown upon drying; fruits clustered from stem and larger branches, pendant from short woody tubercles; stalks flexible, green as are the nearly globose receptacles; florets dull red. "Libtuhan" is the local native Manobo name.

Represented by numbers 13681 and 13260, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July and September, 1912.

In well drained humus covered fertile soil of a steep densely wooded depression at 3500 feet altitude between Duros and Cawilanan peaks. The latter number was collected at 1500 feet lower elevation and was called "Basicong."

Neither of these is typical.

Ficus cassidyana Elm.

Field-note:—Slender shrub like tree; stem 4 inches thick, 20 feet high, terete, rather straight, mainly branched toward the top; wood soft and sappy white, concentrically ringed, a trifle sweet, odorless; bark yellowish gray, smooth, otherwise whitish and with a thin pale white sap; main branches few, ascendingly spreading, sparingly rebranched; twigs slender, 0.5 inch thick, ascendingly curved; leaves upon ascending petioles, the blades also ascending or horizontal, apex abruptly recurved, otherwise flat, harsh, membranous, lighter green beneath, the veins beneath yellowish green; figs very dark green, upon few to 6 inches long sparingly branched tubercles from along the stem only, compressed obovoid, deeply sunken at the blackish umbilicus, castaneus hairy and occasionally spotted with yellowish white milk spots, 3 inches across though immature, barely as long. "Dacab-caban" in Manobo.

Represented by number 13809, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Inhabiting stony ground near the Dalahion creek at 3000 feet altitude or just above its falls.

Group V

(*Ficus indica Linn.*)

Ficus palawanensis Merr.

Field-note:—Epiphytic and forming tree like trunks; main branches few; twigs tough, ascendingly curved; leaves rigidly coriaceous, horizontal or descending, shining deep green on the upper shallowly curved side, paler beneath, apices strongly recurved; figs in divaricate axillary pairs, hard and ruber red except the yellowish umbilicus, the subtending bracts yellowish green. "Balete" in the Manobo dialect.

Represented by number 13737, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Collected from lofty trees in the saddle between Duros and Cawilanan peaks at 3500 feet altitude.

Ficus everettii Elm.

Field-note:—Climbing along a large tree trunk up to the first limbs; stem messed and tightly cleaving to its support; wood soft, pulpy, concentrically marked, nearly tasteless, odorless, dingy or yellowish white; bark gray and covered with brown excrescences; main branches few, long, horizontally spreading, ultimately numerously rebranched, the twigs ascendingly curved; leaves rigidly coriaceous, ascending or horizontal, shallowly folded if at all on the upper much deeper green surface; midvein pale yellowish green, apex abruptly recurved; figs usually in axillary pairs, yellow as are also the rigid subtending bracts, hard, more or less irregularly round, the fruit with the bracts less than 0.5 inch long. "Balete" in Manobo.

Represented by number 14046, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Collected in a densely forested depression at 3500 feet altitude between Duros and Cawilanan peaks.

Ficus umbo-bracteata Elm.

Field-note:—A large tree climber; stem or few stems arising from the same place, 6 inches thick, subterete, slightly twisting about their support, twice as thick toward the top or 40 feet above ground or at the first limbs of the host tree; wood soft, dingy white, its concentric rings conspicuous; bark brown, densely covered with excrescences, gray on the branches, with much latex; main branches few, ascending or horizontally spreading, 20 to 30 feet long, ultimately freely rebranched; twigs rigid, 0.5 inch thick, suberect; leaves rigidly coriaceous, horizontal, nearly flat but apex abruptly recurved, paler green beneath, the veins yellowish green, bud bract dull green; fruits ascending, ellipsoid, 1 inch long, deep red when mature, subtended by yellowish bracts. Also called "Balete" by the Manobos.

Represented by number 14117, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Found on a steep and densely forested ridge at 4250 feet altitude of Cawilanan peak.

Group VII

(*Ficus variegata Elm.*)

Ficus garciae Elm.

Field-note:—Crooked tree; trunk 1.5 foot thick, terete, 30 feet high, with its main branches from the middle; bark with an abundant flow of latex, thick, dirty brown and moss covered, smooth, testaceus except the epidermis; wood soft, light, white, with conspicuous concentric rings, without odor or taste; branches widely spreading and freely rebranched, the slender twigs ascendingly curved; leaves upon yellowish brown ascending petioles, horizontal, shallowly folded, tips recurved, coriaceous; figs upon very short occasionally branched tubercles from the larger branches, hanging upon yellowish green very flexible terete 3 to 5 inches long peduncles, globose, 1.25 inch in diameter, hard, light green, whitish spotted; florets dirty brown. In the Manobo dialect it is called "Agahon."

Represented by number 13380, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

In wet stone gravelly ground of the Catangan creek bank at 1250 feet altitude.

Group VIII

(*Ficus pisifera Wall.*)

Ficus pisifera Wall.

Field-note:—Shrub 15 feet high, with a 3 inches thick stem; branches arising from near the base, long, repeatedly rebranched, the twigs slender and lax; foliage diverse in size, horizontal or descending, flat but with recurved tips, chartaceous, only slighter paler green beneath; wood sappy white, odorless and tasteless, soft; bark with latex, smooth, greenish gray; figs hispidly pubescent, 0.33 inch in diameter, pale flesh red on the exposed sides, usually in axillary clusters, with minute pale yellow cream spots. "Liso" in Manobo.

Represented by number 13338, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Found upon a large bowlder along the wooded banks of the Catangan creek at 1250 feet altitude.

Ficus williamsii epiphytica Elm. n. var.

Epiphytic shrub; stems several, 1 to 2 m long, ascending, branched from below the middle, 2 cm thick, terete, quite rigid; branchlets in subwhorls, ascending, yellowish gray, even the young tips glabrous. Leaves thickly coriaceous, similarly arranged, also rigid, flat, slightly recurved toward the slenderly acute apex, the older leaves bluntly obtuse, base obtuse or subcuneate, oblong, the larger normal ones 7 cm long by 2.5 cm wide at the middle, the entire margins subinvolute in the dry state, glabrous, reddish brown on the nether side when dry, grayish brown on the upper surface, fresh leaves deep shining green above and yellowish green beneath, only a few and alternatingly clustered at the ends of the branchlets, upon 3 to 5 mm long petioles and leaving large scars after falling; bud bracts glabrous, 7 mm long, strongly involute, sharply acuminate, green but turning brown while drying; midrib conspicuous beneath especially toward the base, minutely caniculate along the upper side; lateral nerves very obscure, 5 to 7 pairs, nearly at right angles to the midrib, straight.

Receptacles solitary or in pairs from the leaf axils, 8 mm in diameter though smaller in the dry brown state, globose and umbilicus somewhat constricted, glabrous, smooth, green, rather hard, upon 3 mm long ascendingly curved peduncles which are terminated by 3 small bracts; umbilicus blunt, cone shaped; the apical scales exerted, the inner more elongated ones centrally extending, all imbricate; stamens quite numerous and filling the upper one third of the syconium, diandrous but occasionally monandrous, subsessile or upon very short stalks, 1 mm long or a trifle longer; perianth of 3 distinct though unequal segments which are dark brown and 0.33 to 0.75 mm in length; filaments slender, light brown or subtransparent, as long as the perianth segments though exceeding them in anthesis, when in pairs always unequally long; anther relatively large, 0.5 to 0.75 mm long, fully one half as wide, compressed, curved, truncate and emarginate at both ends, basifixed, usually the upper one a trifle larger; gall flowers very light brown, obovoid in outline but plainly angular, subsessile or occasionally upon a slender 0.75 mm long dark brown pedicel, apex truncately rounded, the minute sessile stigma of a deeper brown; perianth segments apparently of the same color and size as those upon the male flowers, easily becoming detached.

Type specimen number 13829, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Collected upon the upper side of an inclining tree trunk covered with mosses and other vines in the humid forests above lake Danao at 5250 feet altitude. The Manobos call it "Dahonon."

The peduncles are less than one half as long on the variety as they are on the species type. Those collected in the lake Lanao region by *Mrs. Clemens* are referable to our variety.

Ficus driveri Elm. n. sp.

A sprawling and subscandent shrub; stems several, 2 to 4 cm thick, branched from their bases and forming an interlaced network, subterete, the 3 to 8 m long stems branched all along and usually reclining; wood rather hard, finely grained, whitish, without odor or taste; bark grayish brown, very smooth, green beneath the epidermis, otherwise whitish and apparently without latex, easily stripping and very tough; branchlets freely rebranched, slender, lax, even the young green apical portion glabrous. Leaves descending, nearly flat, the abruptly acuminate tips recurved, alternate, widely scattering, glabrous, pleasing green except the old dark green blades, submembranous, entire, elliptically elongated, curing dull brown on both sides, base broadly obtuse or obtusely rounded, the larger ones terminal and 2.5 dm long by 8 to 10 cm wide; midrib whitish beneath even in the dry state, shining, smooth; lateral nerves ascending, 9 to 11 pairs, the cross bars and fine reticulations inconspicuous; petiole less than 1 cm long, stout, glabrate; bud bract dark brown when dry, folded or imbricate, glabrous, 2.5 cm long, very slenderly pointed.

Receptacles hard, luteus to aurantiacus, perfectly globose, less than 1 cm in diameter, much smaller in the dry state, solitary or in pairs from the leaf axils, upon short greenish recurved peduncles, ebracteate; umbilicus flattened on top, circular, 3 mm across, the central portion raised, glabrous, imbricately guarded with short but broad bracts; the inner group of bracts extending toward the center of the fruit, 2 to 3 mm long, tapering from the base to apex, thinner in texture; florets apparently all fertile, those in the upper region subtended by similar bracts, with brown intermixed sterile flowers, all in the young state enveloped by a transparent perianth; pedicel 0.5 to 1 mm long, submembranous; seed surrounded by a thin lighter brown membrane, 1.25 mm long or less, 0.75 mm across, ovoidly ellipsoid; style slender, averaging 1.5 mm long, arising from the upper side of the seeded ovary, the lower portion transparent, that of the apex dark reddish brown, usually contiguous in the early state.

Type specimen number 12845, *A. D. E. Elmer,* Puerto Princesa (Mt. Pulgar), Island of Palawan, March, 1911.

Sprawling over a huge bowlder in a creek bed whose sloping banks are densely wooded or forested at about 1500 feet altitude. Named with pleasure after *Mr.* and *Mrs. T. J. Driver* of Balabac.

In one of my previous articles I doubtfully reported this new species under *Ficus confusa Elm.*

Ficus confusa Elm.

Field-note for 13777:—Epiphytic and subscandent; main branches few, widely spreading, freely rebranched; twigs lax, drooping, branchlets covered with smooth yellowish gray bark; wood white, with a yellowish pith, rather soft; leaves chartaceous, folded, tips recurved, shining and deeper green above, the midvein whitish on the nether side; figs in small lateral clusters, hard and globose, dark green but turning yellowish, with minute white spots. "Gigatgitnon" is the Manobo name for 13777 and "Nanlobayon" for number 13475.

Represented by numbers 13777 and 13475, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August and September, 1912.

Both of these are reported as epiphytes; the former number in the humid forests along the Dalabion creek at 3000 feet altitude, the latter on the wooded ridge between Duros and Cawilanan peaks at about the same elevation.

Ficus propinqua Merr.

Field-note:—Scandent upon small stems up to 15 feet high; stems loosely looping, 1 inch or more thick, subterete, crooked, numerously branched at the top; wood bendable, whitish and with a large pith, a trifle sweet, odorless; bark yellowish gray, brown lenticelled, with an abundance of latex; branches slender, sparingly rebranched, interlaced; leaves horizontal or mainly descending, flat, much deeper green above, rigidly chartaceous, gradually recurved at the apex, margins shallowly concave on the lower side; fruits 0.5 inch in diameter, upon yellowish green stalks, hard, dark green and densely covered with minute milk spots especially toward the sunken apex, in pairs from the leaf axils or in small lateral groups. "Sawad" is the Manobo name.

Represented by number 13563, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

In moist more or less rocky ground of a steep densely forested incline at 3500 feet height of Duros peak.

Ficus flavo-cortica Elm.

Field-note:—Shrub 15 feet high and with a 6 inches thick stem; branches arising from near the base, quite long; wood concentrically marked, soft, odorless and without taste; bark smooth, dull brown except the slightly red inner and latex containing portion; branches laxly rebranched, drooping, tough; leaves descending, chartaceous, much paler beneath, apex recurved; fruits single or in small clusters, axillary or in the axils of the fallen leaves along the branchlets, 0.33 inch in diameter, soft and sulphureus when ripe, roughened with similarly colored lenticels; seeds yellowish, the inner side of the syconium reddish, umbilicus sunken. "Agopid" in Manobo.

Represented by number 13381, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Inhabiting moist stony soil along the densely wooded Catangan creek at 1250 feet elevation.

Appearing more distinct in the field than in the herbarium from *Ficus celebica Blm.*

Ficus mindanaensis Warb.

Field-note:—A tough climber; stem 1.5 inches thick, terete, bendable, looping or loosely twining, branched toward the top; wood soft, sappy white, slightly sweet; bark smooth, grayish white, dark green beneath the epidermis, sappy white next the wood; branches widely sprawling, the free ends drooping, repeatedly short branched; leaves descending, shallowly curved upon the upper smooth surface, tips strongly recurved, quite rigid and chartaceous, paler green beneath; figs solitary or few clustered, pendant from the very flexible stalks, umbilicus crater-like, at least 0.5 inch in diameter, globose, deep ruber red or purplish even the stalks. The natives or Manobos call it "Dalakit."

Represented by number 13579, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Found climbing upon a small tree on the sides of a sparsely wooded cliff 50 feet above the Minusuang river at about 750 feet altitude.

Eight years ago the writer collected and reported this same species from Leyte where in the valley flats it grew to be a low spreading tree. Its green and parchment-like leaves with soft and yellowish nerved lower side, coupled with its rather large candy red to purplish and marble round fruits give it a beautiful appearance and should be brought under cultivation for ornamental purposes.

Ficus hispidulosa Elm. n. sp.

Widely and laxly branchd shrubs; stems one or more from the base, 5 to 8 cm thick, branched from below the middle; wood soft, odorless and without taste, whitish especially the outer portion, covered by a greenish brown smooth bark; branchlets slender and lax, one half drooping, terete, the young apical portion sparsely provided with crisp hairs. Leaves recurved and descending, thinly chartaceous or submembranous, a shade deeper green on the upper glabrous surface, alternatingly scattered, the larger blades terminal, curing dull green on both sides, entire, apex abruptly caudate, base inequilateral and obtusely rounded, oblong, the larger ones 2 dm long by 7 cm wide at the middle, the lower side bristly hirsute along the nerves and reticulations; midrib yellowish and prominent beneath, provided with brown hispid hairs; lateral nerves 7 to 11 on each side, similar to the midrib though less prominent, ascendingly curved, the cross bars and reticulations relatively prominent beneath; petiole stout, also hairy, ultimately glabrous, yellowish brown, 3 mm long; bud and stipular bracts a trifle longer than the petiole, acuminate, sparsely ciliate along the margins.

Receptacles 6 to 8 mm in diameter when fresh, green, becoming yellow when mature, erect, solitary or in small groups from the leaf axils or along the branchlets in the old leaf axils, hard, subsessile or upon 2 to 3 mm long glabrate peduncles; umbilicus slightly raised, small, rugose, barely sunken in the middle; the outer scales broad, horizontally placed, coriaceous, the inner set elongated and thinner; flowers apparently all fertile, light brown, 2 mm long, subsessile or upon hyaline contiguous bases; seed ovary subreniform, 1 to 1.25 mm long, 0.75 mm wide, more or less enveloped by a thin transparent sheath or perianth whose edges are usually provided with very fine white colored woolly hairs; style subterminal, ascendingly curved, averaging 0.5 mm long, ending in a clavate dark brown stigmatic portion.

Type specimen number 13328, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Collected in wet fine gravelly washed down soil near stream beds in cool densely shaded woods at 750 feet above the level of the sea. "Delacit" is its Manobo name.

Differs from *Ficus microsphaeria Warb.* in its hispidulous twigs and leaves.

Ficus bakeri Elm. n. sp.

A lofty tree climber; stem 5 to 8 cm thick, numerously branched toward the top; wood whitish or reddish brown tinged toward the center, porous; branches freely rebranched and forming tangled masses; twigs relatively short, ascendingly curved, flexible, brownish even so in the wrinkled dry state, glabrate. Leaves horizontal or descending, slightly recurved toward the apex, otherwise flat, subchartaceous, very dark green on the upper glabrate surface, much paler green beneath, curing similarly dark brown on both sides, the lower surface minutely grayish white punctate and the nerves finely pubescent, the entire margins somewhat curved upon the nether side, apex obtusely rounded, base broadly rounded, alternatingly scattered along the branchlets, ovate to ovately elliptic, the average blades 5.5 cm long by 4 cm wide a trifle below the middle; petiole 1 cm long or less, brown, glabrate, caniculate along the upper side; midrib similar in color when dry, conspicuous beneath and in the early state finely pubescent, plane on the upper side; lateral nerves 3 to 4 pairs, ascendingly curved especially toward the distal ends, in color prominence and pubescence similar to the midrib, cross reticulations coarse, not evident from the upper side; bud bract conical, 5 mm long, subcinereous.

Receptacles chiefly in the fallen leaf axils, short ellipsoid or subglobose, yellowish green, glabrous; peduncle thick, yellowish brown, short pubescent, terminated by 3 blunt bracts; umbilicus with a slightly raised rim, a trifle sunken in the middle; the external scales short and broad, horizontal, imbricate; the inner ones reddish brown, much thinner, linear to oblong, 2 mm long; flowers numerous, apparently all fertile, sessile; perianth or involucral bracts 3, becoming free, somewhat unequal in size, similar in color shape and texture to those of the inner umbilical scales; seed ovary sessile, ovately elongated from the side view, flattened, 1.25 mm long, 0.75 mm wide, brown but with a broad much lighter brown margin, the short usually deciduous style lateral.

Type specimen number 14062, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Collected in a humid densely forested sheltered depression at 3500 feet altitude between the peaks of Duros and Cawilanan. This the Manobos also call "Cataupi" although it does not belong in that group. In a nearby place deep red fruits were seen on the ground and no doubt belong to this same species. Dedicated to *C. F. Baker*, professor of agronomy of the College of Agriculture at Los Baños.

Related to *Ficus tayabensis Elm.* but leaves less than one half as large, not so tapering at the apex, nerves beneath finely pubescent and not at all tessellately marked; our peduncles are provided with three very evident bracts.

Group IX

(*Ficus ulmifolia Lam.*)

Ficus todayensis Elm.

Field-note:—Erect medium sized tree; trunk at least 2 feet thick, 35 feet high, branched from the middle or above it, terete except the wadded ground portion; main branches ascending, ultimately crookedly rebranched; twigs numerous and horizontally spreading; wood moderately tough, yellowish white tinged, conspicuously ringed, quite odorless and tasteless; bark smooth, gray and brown blotched, yellowish otherwise; leaves horizontal or descending, chartaceous, shallowly folded upon the upper darker green side, tips slightly recurved; figs solitary or in axillary pairs, soft but smooth when in the soft flavus state, globose or nearly so or obscurely obovoid, 0.75 inch across. "Hagosihis," is the Manobo vernacular name.

Represented by number 13879, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Found upon wooded limestone outcroppings at 250 feet above the sea and only a few miles from the coast.

Ficus manilensis Warb.

Field-note:—Small and erect tree; stem 8 inches thick, terete, 25 feet high, branched from the middle; wood sweetish, with white concentric rings, odorless, rather soft yet brittle; bark dull brown, more or less lenticelled, sappy white except the epidermis; branches laxly and slenderly rebranched, the suberect or merely ascendingly curved tips dull greenish; leaves thinly chartaceous, horizontally spreading, much deeper green beneath; fruits clustered along the branchlets below the foliage, very dark green, upon similarly colored suberect or divaricate peduncles, globose, less than 0.5 inch in diameter, irregular about the sunken umbilicus. Its Manobo name is "Hagosihis."

Represented by number 13430, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Found in moist rich ground of a forested flat at 500 feet above sea level.

Ficus cumingii Miq.

Field-note:—Shrub; stem suberect and terete, 10 feet high or higher, few inches thick, branched from below the middle; branchlets numerous, slender and lax, mostly horizontal or descending, greenish brown; wood dingy white, concentrically ringed, odorless, slightly sweet, moderately soft; bark smooth, grayish mottled, hypodermis green; leaves descending, gradually recurved, paler green beneath; figs axillary, subglobose, green and with minute milk spots, solitary or in pairs, upon recurved peduncles, scabrid, when mature smooth shining and soft. The Manobos call it also "Agosihis."

Represented by number 13920, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

In rich ground among thickets of old clearings at 500 feet above the sea near the Minusuang river. It quickly spreads over cut down areas and proves a menace to the farmer.

Ficus ampelas Burm.

Field-note:—Shrub 10 feet high and with a few inches thick stem; bark mottled, covering the soft and dingy white wood; branches numerously rebranched, the ultimate ones descending; foliage copious, mostly horizontal and with recurved tips, paler beneath, petiole usually scurfy brown, blades chartaceous; figs green, 0.5 inch thick, globose or umbilicus slightly raised; florets water white. In Manobo it is called "Soso-dalago."

Represented by number 13346, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

In stony ground of banks of the Catangan creek at 1000 feet altitude. Its fruits are rather large and in most other localities it is reported as a tree.

Ficus areneta Elm.

Field-note:—A tree-like shrub; stem usually more than 1 foot thick near the ground, otherwise 6 to 10 inches only, crooked and irregular, 15 to 25 feet high; branches arising from below the middle, widely spreading and recurved, rebranched all along, the slender twigs descending or drooping; bark smooth, mottled; wood soft, whitish, odorless, sweetish, with prominent concentric rings, branchlets ascending, hispid; foliage horizontal or descending, casting a good shade, flat, chartaceous, paler beneath, the young and terminal ones very large; figs along stem and larger branches, clustered, upon short rigid woody tubercles, hanging upon yellowish green flexible peduncles, flatly globose, 1 inch across, yellowish when mature, the brown umbilicus forming a small cup. "Pele" in Manobo.

Represented by number 13321, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Quite commonly scattered in very damp fertile soil of wooded flats at 500 feet above the sea.

Ficus fiskei Elm.

Field-note:—Lax undershrub, suberect or sprawling; stem 1.5 inches thick, 10 feet high or long, branched from near the base, repeatedly rebranched, the ultimate ones very slender and drooping in order to expose their leaf surfaces; wood soft, whitish, odorless and nearly tasteless; bark greenish gray, smooth; leaves chartaceous, descending, extremely variable in size, the longer ones terminal, paler green beneath; figs erect, single or in small axillary groups, upon short yellowish red stalks, ovoidly globose, 0.5 inch in diameter, the basal portion yellow, reddish toward the exposed apex through which the similarly colored umbilical bracts protrude. Called "Perai" by the Manobos.

Represented by number 13315, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Inhabiting moist gravelly soil of a densely wooded bank of the Catangan creek at 1000 feet altitude.

In the herbarium, Bureau of Science, is a specimen marked *Ficus hemicardia Merr.* which seems very closely related to this very variable species.

Those species of our figs with slender descending or nearly drooping twigs have their larges leaves terminal and always pendant. The peduncle of a number of Philippine species always turns the color of the ripe receptacle or syconium. In my original description there is mention made of the great variation in the size of its leaves and the distribution of its figs—occuring in the leaf axils, on the branches, along the stem and even upon exposed roots. There are other figs in our archipelago with a similar range of fruit distribution.

Ficus sibuyanensis Elm.

Field-note:—A rather small suberect tree; stem 3 inches thick, terete but crooked, 25 feet high, branched above the middle; bark smooth and brown, grayish mottled on the branches, yellowish white except the epidermis; wood quite soft, heavy, yellowish tinged throughout, concentrically ringed, odorless and tasteless or nearly so; main branches spreading, very numerously rebranched, the short twigs suberect; leaves ascending, flat but tips strongly recurved, paler green beneath; figs axillary, subpendant, solitary or in pairs, rough and flavus on the under side, red on the upper or exposed portion, soft, smooth and vinosus on the tree when fully mature. "Hagopitan" is the vernacular Manobo name.

Represented by number 13719, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Collected in good ground of woods in the saddle between Duros and Cawilanan peaks at 3500 feet altitude.

Group X

(*Ficus gigantifolia Merr.*)

Ficus gigantifolia Merr.

Field-note:—A medium sized tree; trunk 2 feet thick, 35 feet high, terete, crooked, with main branches from the middle; wood dingy white, odorless and without taste, very soft; bark very dark brown, lenticelled or excrescent, thick, with abundant latex, yellowish except the epidermis; main branches few and ascending, only sparingly rebranched; leaves alternatingly crowded toward the ends of the ascendingly curved and 0.5 to 0.75 of an inch thick twigs, mostly horizontal, subcoriaceous, flat, much deeper green beneath; figs usually in pairs from the leaf axils, globose, 1 inch thick, hard, shining green and with whitish spots, when fully ripe on the tree soft and vinosus, sessile, normally subtended by 3 slenderly acuminately pointed green bracts; florets red, the umbilicus covered by 3 small and thick bracts. "Laebangan" in Manobo.

Represented by number 13348, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Collected in wet rocky ground along the densely wooded Catangan creek at 1250 feet altitude.

Group XI

(*Ficus macropoda Miq.*)

Ficus fulva Elm. n. sp.

An alpine forest tree climber; stem 3.5 cm thick, terete, bendable; wood porous, covered with gray and brown blotched and smooth bark; branches rigid, forming more or less interlaced masses toward the top, the young portion of the twigs densely fulvus. Leaves alternating along the wiry branchlets, subchartaceous, dark green though paler beneath, ovate, apex acute, base broadly rounded or shallowly cordate, the entire margins subinvolute when dry, sides unequally dull greenish brown, the average lamina 1 dm long by 6 cm wide below the middle, densely fulvus pubescent beneath, the upper surface harsh and hairy along the midvein; petiole fulvus hirsute, 1 to 1.5 cm long, becoming nearly glabrous when old; bud bract short, light fulvus; midrib prominent beneath and densely fulvus; lateral nerves 3 to 5 pairs, the basal pair much ascendingly curved, upper ones nearly straight and oblique, tips faintly interarching, quite prominent beneath, the numerous cross bars and reticulations evident on the lower side only.

Receptacles dull green though similarly densely fulvus, globose, 1.25 cm in diameter, usually in the leaf scars; peduncle dark fulvus hairy, 5 mm long, stout, subtended by ciliate bract vestiges; umbilicus truncate, slightly raised, the inwardly extending scales brown and membranous, 2 to 3 mm long, tapering from the base to apex; florets pistillate and staminate, the latter scattered in the region next to the umbilical scales; staminate ones 3 mm long, sessile, bulgingly curved, the upper one third slenderly pointed, enveloped by a brown membranous sheath-like perianth; anthers 1 or occasionally 2 in each floret, upon a 0.5 mm long thick brown somewhat compressed pedicel, 1.5 mm long, base auriculate, ovoidly oblong, abruptly contracted at the apex into a sharp point; pistillate floret as long as the staminate ones, upon a 0.5 to 0.75 mm long pedicel; the ovary portion ellipsoid or broadly fusiform and extended into a 1 mm long style, surrounded by 3 perianth segments which are similar in color and texture to those of the male perianth; segments linear to lanceolate or even oblongish, nerve-like along the back, sides ventrally folded, terminated into a sharp acuminate point.

Type specimen number 14090, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered in the forests about lake Danao at 4750 feet altitude and is known to the Manobos as "Sumbay."

Apparently related to *Ficus ahernii Merr.*, in manuscript, and *Ficus macropoda Miq.*

Group XII

(*Ficus infectoria Roxb.*)

Ficus infectoria caulocarpa (Miq.) King.

Field-note:—Scandent along a large tree trunk up to 30 feet where it apparently is branched into several long widely spreading and numerously rebranched limbs, the stem or that portion along its support is also branched and forms interlaced masses; wood soft, white, concentrically marked; bark gray, smooth, with latex; twigs flexible; leaves horizontally spreading, thinly coriaceous, shallowly folded above, tips strongly recurved, a trifle paler beneath; young figs erect, pale green, with bright red rather small umbilical tips. "Balete" in Manobo.

Represented by number 13471, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Collected in wooded flats at 750 feet above sea level and was noticed along the Catangan and Dalahion creeks at a much higher elevation.

Ficus umbrina Elm.

Field-note:—Tree-like yet cleaving about another tree with rope-like roots or suckers, main stem 10 inches thick, 25 feet high or long, with branches nearly as long; wood soft, ringed, nearly odorless and tasteless; bark with latex, blotched, lenticelled; the ultimate branches numerous, lax, somewhat drooping, smooth and brown; leaves similarly drooping, rigidly coriaceous, flat or nearly so except the tips, very green above; figs usually in pairs, creamy white but yet hard, greenish punctate, more or less irregular, the basal portion falsely stipitate, umbilicus well sunken; florets watery or pale white. This is also called "Balete" by the Manobos.

Represented by number 13279, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Upon a forested ridge at 1250.

Ficus adami Elm.

Field-note:—Very large tree; trunk 4 feet through, 60 or more feet high, its main branches from the middle or below it, subterete, somewhat crooked; large main branches ascending but soon horizontally spreading, ultimately numerously rebranched; trunk divided at base into buttressed prop roots; wood with a faint sweet taste and odor, soft, conspicuously ringed, dingy white; bark yellowish and densely covered with transverse brown colored excrescences, the middle portion isabellinus, the soft inner side sappy white, the under side of the epidermis light yellow; twigs relatively short, suberect; leaves horizontal, coriaceous, curved upon the upper deep green and shining surface, much lighter green and duller beneath; veins greenish white; figs in pairs and axillary, divaricate or descending, upon flattened pale green stalks, pale green when falling but turning yellow on the ground, spotted with light green papillae, 0.3 inch long, irregularly subglobose or short ellipsoid, the 3 green subtending bracts very small. "Baleti" in Manobo.

Represented by number 14029, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Rediscovered in a densely forested humid flat along the Catangan creek at 3000 feet altitude. A most characteristic species and our tree was heavily loaded with fruits which were constantly falling and covering the ground.

Group XIII

(*Ficus integrifolia Elm.*)

Ficus integrifolia Elm.

Field-note:—A suberect shrub; stem 3 inches thick, 10 to 15 feet high, terete, branched from below the middle; wood white, soft and pulpy, pith large and similarly colored; bark grayish green, smooth, the middle and inside brownish, with latex; branchlets lax, widely spreading, the twigs descending and their tips usually ascendingly curved; leaves very smooth, upon ascending dull green petioles, nearly flat, apices abruptly and strongly recurved, much paler green beneath; figs clustered along the larger branches, from short woody tubercles, upon pale green pendant stalks; the receptacles obovoidly globose, soft and nearly 1 inch across when mature but still remaining pale green as their stalks, the torus greenish white and juicy; florets brown. Either "Mayahan" or "Mayhan" in Manobo.

Represented by number 13593, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

In among bowlders of a narrow cut along the Catangan creek at 1500 feet altitude whose sides are heavily wooded.

Not at all typical and in some respect approaches *Ficus repandifolia Elm.*

Group XIV

(*Ficus hauili Blco.*)

Ficus inaequifolia Elm.

Field-note:—Middle sized tree; stem subterete, 1.5 feet thick, 35 feet high, its main branches arising from below the middle; wood sappy white, soft, without odor or taste; bark yellowish blotched, dark brown lenticelled; main branches ascending, ultimately widely spreading, the branchlets lax and long, with an abundance of whitish sticky juice; leaves very unqual, descending, chartaceous, shallowly curved upon the paler green nether side, tips strongly recurved; twigs angular or compressed, the terminal bract equally green; figs in small clusters from the leaf axils, divaricate or erect from the green peduncles, 0.33 inch thick, obovoidly globose, green, with light brown lenticels. The Manobo name is "Todaya."

Represented by number 13422, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Collected in wet stony soil of wooded banks of the Catangan creek at from 500 to 1000 feet altitude. This is the fourth locality it is known through the collections of the writer and in this locality it is distinctly a tree.

Ficus setibracteata Elm. n. sp.

Small and slender tree; stem terete, 2 dm thick, 10 m high or higher, straight, chiefly branched toward the top; wood soft, yellowish white, rather brittle, odorless and tasteless; bark relatively thick, smooth and yellowish gray or mottled on the surface, otherwise of the wood color; main branches divaricate, long, numerously rebranched, the slender and lax twigs drooping; twigs fine, glabrous, yellowish when dry. Leaves descending, smooth and glabrous on both sides, shining on the upper much deeper green surface, gradually recurved toward the acuminate apex, otherwise flat, curing greenish beneath and grayish brown above, subchartaceous, entire, copious, alternatingly scattered along the branchlets, broadly obtuse or the largest blades obtusely rounded at the base, lanceolately oblong, the average ones 9 cm long by nearly 3 cm wide below the middle; petiole glabrous, roughened along the midrib along the lower side, caniculate above, 5 mm long; midrib prominent beneath, light straw color when dry; lateral nerves very divaricate, strict, tips interarching, 7 to 9 pairs, the basal pair oblique, secondary ones faint and extending only one half way to the edge, reticulations obscure; bud bract 1 cm long, yellowish, with seta-like points, glabrous, strongly involute.

Receptacles in pairs or in small axillary clusters, hard, green, ovoidly globose, 8 mm thick in the fresh state, only 5 mm in diameter when dry, subsessile or sessile, subtended by 3 rather thin brown glabrous bracts, deeply sunken at the apex; florets stramineus, umbilical rim thickened and rugose, sunken in the middle; the outer bracts thick, horizontal, imbricate; the inner ones extending in a cluster toward the center of the fruit, oblong, 2 mm long, hyaline; staminate flowers not seen; pistillate ones 2 mm long, compressed, strongly bulged below the middle, subsessile; perianth segments appressed, 2 or usually 3, hyaline, linear, finely ciliate especially toward the base, equal in length; ovary 0.75 mm long, with transparent keels, extended into a 1 mm long style which bears a brown tip.

Type specimen numbers 14034 and 13422, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October and August, 1912.

Discovered this slender rather large tree in well drained soil of steep ravine slopes in humid woods along the Catangan creek flat at 3500 feet altitude. The Manobo name is "Macabotoay."

Apparently not matched yet approaching *Ficus confusa Elm.* The latter number was erroneously distributed as *Ficus inaequifolia Elm.*

Ficus urdanetensis Elm. n. sp.

Suberect tree-like shrub; stem 1 dm thick, terete, crooked, 5 to 7 m high, branched from the middle; wood white, soft and pulpy, odorless and without taste, pith large; bark smooth, brown, easily stripping along the branches; branchlets numerous, lax, horizontally spreading, terete in the dry state, dull brown and finely hispid when young. Leaves similarly spreading, coriaceous, flat, alternate, the abruptly recurved tips lighter green on the minutely grayish punctate nether side, basal portion more or less inequilateral and obtusely rounded, entire, drying dull brown on both sides, glabrous except the minutely hispid nerves beneath, obovately oblong, the larger blades 1.5 dm long by 5.5 cm wide above the middle, the young leaves red and erect or suberect; petiole 1 to 1.5 cm long, stout, caniculate above, strigose when young, also dark brown when dry; midrib edged beneath, plane above; lateral nerves 8 to 10 pairs, ascending and curved, tips united especially of the upper pairs, reddish brown and sparsely pubescent, cross bars faint; bud bracts glabrous, 7 mm long, caducous.

Receptacles solitary or in axillary pairs, ascending, obovoidly globose, greatly varying in size and shape, shining pale green, sprinkled with brownish lenticels, 1 to 1.25 cm long, subsessile or more commonly upon 2 to 3 mm long green and glabrous stalks which at the distal end bear 3 glabrous broadly rounded bracts; umbilicus excavated, the rim thick and coarsely rugose, more or less strigose in the sunken region; external scales crustaceous, horizontally imbricated; the inner scales thinner, 1.25 mm long, brown except the subhyaline finely ciliated margins, ovately oblongish; male flowers concealed among the less numerous inner umbilical bracts, than 1 mm long, upon a short thick pedicel, ovoidly compressed and obscurely curved, monandrous; perianth completely enveloping the short ovately elliptic nearly sessile anther; pistillate flowers 1.5 mm long, short stipitate, the ovary nearly lateral and usually obovoidly compressed, bearing a short style with a flattened stigma, the 3 perianth segments relatively small and attached to the base of the ovary.

Type specimen number 14170, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

In alluvial wet soil bordering the forested lake Danao region at 5000 feet altitude. The Manobo name is "Tabog."

Most closely allied to *Ficus curranii Merr.*, which is another high alpine species.

Ficus carpenteriana Elm.

Field-note:—A shrub-like tree; stem 6 inches thick, mainly branched from below the middle, the ultimate ones slender and widely spreading; bark smoothish, greenish gray, reddish beneath the epidermis and with white latex; leaves paler green beneath, slightly recurved, tips much recurved, nerves prominent and yellowish beneath; figs mostly axillary although occasionally clustered along the stem and larger branches, subsessile, very dark green, slightly compressed, irregular in shape and with milk spots, the umbilicus stellately crowned, usually covered with fine fuzzy brown hairs; florets pale or yellowish white. "Tabog" in Manobo.

Represented by number 13261, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Inhabiting damp humus covered soil along a wooded ridge of Giwantanan knoll at 1000 feet altitude.

Group XV

(*Ficus crassitora Elm.*)

Ficus apoensis Elm.

Field-note:—Rather large sized trees; bole straight, terete, 2.5 feet in diameter, 50 feet high, mainly branched toward the top; wood prominently ringed, the sappy white portion with semiviscid sulphureus sap, pith aurantiacus; bark smoothish, brown, thick, the inner side sappy white, the middle portion yellowish; twigs ascending, dull brown; leaves horizontal or descending, chartaceous, shallowly folded on the upper darker green side; tips much recurved; figs usually in pairs of the leaf axils or in their scars, divaricate or subpendant, upon flexible green stalks, shining light green, torus otherwise thick, less than 0.75 inch in diameter; florets red. Called "Topasan" in Manobo.

Represented by number 13620, *Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Inhabiting stony ground of sheltered forested flats along the Catangan creek at 1750 feet altitude. The Bagobos also called the mount Apo tree "Tapasan."

LEAFLETS OF PHILIPPINE BOTANY

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First supplement to the list of

THE LOWER FUNGI OF THE PHILIPPINE ISLANDS

by

C. F. Baker

(*College of Agriculture, Los Baños, P. I.*)

The publication of the Preliminary List of the Lower Fungi of the Philippine Islands in Leaflets of Philippine Botany, Vol. VI, pages 2065 to 2190, immediately called forth from various friends of this work, many corrections, additions, bibliographical citations and taxonomic suggestions. At the same time the studies of Philippine material by *Sydow*, *Rehm*, *Saccardo*, and others in Europe, were being rapidly continued and published. The European war having caused a temporary discontinuance of new work, this becomes an opportune time to bring all further contributions together, down to date.

The field work of two of my student assistants, *S. A. Reyes*, and *M. B. Raimundo*, has become increasingly fruitful and important. They are only able to give odd moments to it, but even with this, their most unusual powers of observation have produced great results. I have never known of anything better among American students. I have also received very valuable assistance from others of my students, notably from *J. J. Mirasol*, *G. Evaristo*, *N. G. Teodoro*, and *E. Sablan*, all as effective as I should expect from the average American Agricultural College student under similar circumstances.

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The Philippine Government should certainly soon recognize the high importance of laying the foundations here for work in Plant Pathology. In the United States and in most of the English colonies, the crucial importance of this work has long been recognized. These Islands have already had one great agricultural industry wiped out by a fungous disease, another seriously crippled, and losses from these causes are constantly occurring in various current crops. In the face of this there is no official Plant Pathologist in the Islands. As I have frequently stated elsewhere, this line of work, together with Economic Entomology, forms the very highest order of agricultural insurance. With the help of *Reyes* and *Raimundo,* I have every week become acquainted with new plant diseases, many never recognized in these Islands before, many entirely new to Science, and many of very serious economic importance. We must have a thorough technical knowledge of all these things as rapidly as we can get it, if we are to build up a sound agricultural practice in these Islands. When our much needed Plant Pathologist comes, he will find the ground broken over a field of unsurpassed opportunities, and we shall be able, very fortunately, to furnish him with first class assistants from among our graduates.

Even while awaiting permanent organization of the work, we might be able to accomplish a great deal of value, had we any laboratory or laboratory equipment. What we have accomplished has depended to a very large extent on night work and personal expense. Reference to the small mycological library possessed by the government necessitates a trip to Manila, which we can rarely accomplish. These conditions must explain why the work has not developed more rapidly, and must absolve us from any suspicion of not having clearly recognized the fundamental importance of this work to the development of Philippine Agriculture and Philippine Science.

Again I have to acknowledge the kindly helpfulness of *Dr. Copeland, Dr. Foxworthy,* and *Mr. Merrill,* and especially *Mr. Elmer*—who has accomplished such a colossal work in Philippine Botany through private enterprise, and who has borne the entire burden of the publication of these papers.

The present supplement lists 320 additions to the known Philippine Lower Fungi, and this brings the entire list up to 958. The additions are starred in the following enumeration.

Corrections and additions, especially in the bibliography, as also synonymical and taxonomical indications, are most earnestly solicited.

UREDINALES

PUCCINIACEAE

Aecidium banosense Syd.

1913 *Sydow*, Ann. Myc. IX—Los Baños, on a *Vernonia* (*Baker*, 1553)

Aecidium blumeae Henn.

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 767

1914 *Sydow*, Philip. Journ. Sci. IX, C, 159—Taytay, Palawan, on *Blumea balsamifera* (*Merrill*, 8740)

Exsiccatus: *Sydow*, Fung. exot. no. 23—Malasugat, Mindanao, on *Blumea balsamifera* (*Merrill*)

Aecidium clerodendri Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 43—San Isidro, Prov. Nueva Ecija, on *Clerodendron calamatosum* (*Merrill*, 4198)

1914 *Sydow*, Ann. Myc. XII, 111

Aecidium kaernbachii Henn.

1912 *Sydow* et *Butler*, Ann. Myc. X, 273

1914 *Sydow*, Ann. Myc. XII, 111—Formosa

1914 *Baker*, Leafl. Philip. Bot. VI, 2068 (non *Puccinia convolvuli*, fide *Sydow* in later letter); 2071 (*Sydow* reference under *Puccinia convolvuli* goes to *Aecidium kaernbachii*, dropping *Puccinia convolvuli* from the list)

Exsiccatus: *Sydow*, Fung. exot. nos. 25 and 26

Aecidium machili Henn.
1914 *Sydow,* Ann. Myc. XII, 111—Formosa

Aecidium nummulare Berk.
1875 *Berkeley,* Journ. Linn. Soc. XIV, 95—Ceylon, on *Ceropegia candelabra*
1888 *DeToni,* Sacc. Syll. Fung. VII, 809

Aecidium paederiae Diet.
1912 *Sydow* et *Butler,* Ann. Myc. X, 273
1914 *Sydow,* Ann. Myc. XII, 111—Formosa

*** Aecidium parile Syd.**
1914 *Sydow,* Ann. Myc. XII, 197—Mt. Maquiling, on *Goniothalamus elmeri* (*Baker,* 2802)

> This species does not occur on a *Loranthus* as indicated in the original description, but produces on the *Goniothalamus* a remarkable *Loranthus*-like hexenbesen.

Aecidium phyllanthinum Syd.
1907 *Sydow* et *Butler,* Ann. Myc. V, 505—India, on *Phyllanthus reticulatus*
1912 *Saccardo* et *Trotter,* Syll. Fung. XXI, 780

Aecidium plucheae Henn.
1908 *Hennings,* Philip. Journ. Sci. III, C, 44—Iloilo, on *Pluchea indica* (*Copeland,* 88 and 89)
1912 *Saccardo* et *Trotter,* Syll. Fung. XXI, 766

*** Aecidium rhytismoideum Berk.** et **Brm.**
1914 *Sydow,* Philip. Journ. Sci. IX, C, 159—Lake Manguao, Palawan, on *Diospyros discolor* (*Merrill,* 8969); Mt. Capoas, Palawan, on a *Diospyros* (*Merrill,* 9093)

Aecidium torae Henn.
1904 *Hennings,* Engl. Bot. Jahrb. XXXIV, 42

1905 *Saccardo,* Syll. Fung. XVII, 427

Exsiccatus: *Sydow,* Fung. exot. no. 72—Basagan River, Mindanao, on *Cassia tora* (*Merrill*)

Aecidium uvariae-rufae Henn.
1912 *Saccardo* et *Trotter,* Syll. Fung. XXI, 754

Hamaspora acutissima Syd.
1914 *Sydow,* Ann. Myc. XII, 108—Formosa

Hemileia vastatrix Berk. et Brm.
1871 *Thwaites,* Rep. Dir. Roy. Bot. Gard. Peradeniya
1872 *Thwaites,* Rep. Dir. Roy. Bot. Gard. Peradeniya
1873 *Thwaites,* Rep. Dir. Roy. Bot. Gard. Peradeniya
1873 *Dyer,* Quart. Journ. Micr. Sci. XIII, 79-81
1874 *Dyer,* Gard. Chron. I, 641
1874 *Thwaites,* Gard. Chron. I, 641
1874 *Thwaites,* Gard. Chron. II, 624
1875 *Thwaites,* Rep. Dir. Roy. Bot. Gard. Peradeniya
1878 *Dyer,* Gard. Chron. X, 664
1878 *Thwaites,* Rep. Dir. Roy. Bot. Gard. Peradeniya
1879 *Morris,* Proc. Planter's Assoc. Ceylon 113-120
1879 *Morris,* Ceylon Observer, suppl. Aug. 5
1879 *Morris,* Nature XX, 537-559
1880 *Dyer,* Quart. Journ. Micr. Sci. XX, 119-129
1880 *Massee,* Journ. Bot. XVIII, 314-317
1880 *Ward,* Proc. Planter's Assoc. Ceylon 38-46
1880 *Morris,* Journ. Linn. Soc. XVII, 512-517
1881 *Ward,* Proc. Planter's Assoc. Ceylon 46 48
1881 *Morris,* Proc. Planter's Assoc. Ceylon 35-38
1882 *Ward,* Quart. Journ. Micr. Sci. XXII, 1-11
1882 *Ward,* Journ. Linn. Soc. Bot. XIX, 299-335
1882 *Ward,* Trop. Agrcl. 646—651
1882 *Ward,* Proc. Planter's Assoc. Ceylon 13-19; 253-319
1882 *Schrottky,* Proc. Planter's Assoc. Ceylon 320-383
1883 *Ward,* Proc. Lit. Phil. Soc. Manchester XII, 21-25
1891 *Fawcett,* Bull. Bot. Dept. Jamaica no. 22, 3
1893 *Dyer,* Kew Bull. 361-363

1908 *von Faber*, Centralb. für Bakt. XXI, 97-117
1908 *Pole-Evans*, Ann. Rep. Transvaal Agrcl. Dept. 1906-7, 165
1908 *Hennings*, Philip. Journ. Sci. III, C, 42—Baguio, on *Coffea arabica* (*Merrill*, 4913).
1913 *Petch*, Ann. Roy. Bot. Gard. Peradeniya V, pt. 5, 359

Kuehneola desmium (Berk. et Brm.)
1900 *Raciborski*, Paras. Alg. und Pilze Javas I, 28 (*Uredo gossypii*)
1906 *Petch*, Trop. Agrcl. XXV, 283-289 (*Uredo gossypii*)
1914 *Baker*, Leafl. Philip. Bot. VI, 2074 (*Uredo desmium*)

Exsiccatus: *Sydow*, Fung. exot. no. 68

Kuehneola fici (Cast.) Butl.
1845 *Castaigne*, Cat. Pl. Mars. II, 87 (*Uredo*)
1883 *Spegazzini*, Fung. Guaran. I, no. 132 (*Uredo*)
1888 *DeToni*, Sacc. Syll. Fung. VII, 847 (*Uredo*)
1908 *Hennings*, Philip. Journ. Sci. III, C, 43 (*Uredo*)—Balut Isl., on *Ficus minahassae* (*Merrill*, 5422)
1912 *Sydow* et *Butler*, Ann. Myc. X, 271 (*Uredo*)
1914 *Butler*, Ann. Myc. 76
1914 *Baker*, Leafl. Philip. Bot. VI, 2075 (*Uredo fici*)
1914 *Sydow*, Ann. Myc. XII, 108—Formosa

* **Kuehneola garugae Syd.**
1914 *Sydow*, Ann. Myc. XII, 196—Los Baños, on *Garuga abilo* (*Reyes*, comm. *Baker*, 1977 and 2144)

* **Phakospora pachyrhizi Syd.**
1914 *Sydow*, Ann. Myc. XII, 108—Formosa, on *Pachyrhizus angulatus* (*Fujikuro*, 37)

* **Phakospora phyllanthi Diet.**
1910 *Dietel*, Ann. Myc. VIII, 469—India, on *Phyllanthus distichus*

1912 *Saccardo* et *Trotter*, Syll. Fung. xxi, 608
1912 *Sydow* et *Butler*, Ann. Myc. x, 269

Puccinia congesta Berk. et Brm.
1870 *Berkeley* et *Broome*, Ceylon Fung. no. 815
1888 *DeToni*, Sacc. Syll. Fung. vii, 734
1894 *Lagerheim*, Tromsoe Museums Aarshefter xvii, 25
1890 *Saccardo*, Syll. Fung. xiv, 357 (*Puccinia solmsii*)
1904 *Sydow*, Monogr. Ured i, 834
1912 *Petch*, Ann. Roy. Bot. Gard. Peradeniya pt. iv, 237

Exsiccatus: *Sydow*, Fung. exot. no. 62

Puccinia engleriana Henn.
1912 *Sydow* et *Butler*, Ann. Myc. x, 258

Puccinia heterospora Berk. et Curt.
1869 *Berkeley* et *Curtis*, Journ. Linn. Soc. Bot. x, 356 (not Vol. v as given in the preliminary list)
1879 *Thuemen*, Rev. Mycol. 10 (*Uromyces sidae*)
1883 *Seymour*, Bot. Gaz. viii, 357-358
1884 *Winter*, Hedw. 7-9
1906 *Sydow* et *Butler*, Ann. Myc. iv, 43
1908 *Hennings*, Philip. Journ. Sci. iii, C, 42—Prov. Rizal, on *Sida mysorensis* (*Foxworthy*, 118)

Puccinia kuehnii (Krueg.) Butl.
1906 *Sydow* et *Butler*, Ann. Myc. iv, 445 (*Uredo*)
1912 *Sydow* et *Butler*, Ann. Myc. x, 272 (*Uredo*)
1914 *Butler*, Ann. Myc. xii, 81
1914 *Baker*, Leafl. Philip. Bot. vi, 2075 (*Uredo*)

Puccinia merrillii Henn.
1908 *Hennings*, Philip. Journ. Sci. iii, C, 42—Mt. Halcon, Mindoro, on *Smilax vicaria* (*Merrill*, 6151)
1912 *Saccardo* et *Trotter*, Syll. Fung. xxi, 674

Puccinia mesomorpha Syd.
1912 *Saccardo* et *Trotter*, Syll. Fung. xxi, 661

Puccinia philippinensis Syd.

1914 *Sydow*, Ann. Myc. XII, 107—Formosa

Exsiccatus: *Sydow*, Fung. exot. nos 158 and 159

Puccinia purpurea Cke.

1906 *Sydow* et *Butler*, Ann. Myc. IV, 434

1908 *Hennings*, Philip. Journ. Sci. III, C, 42—Lake Lanao, Mindanao, on *Sorghum halepensis* (*Clemens*, A)

Puccinia romagnoliana Mre. et **Sacc.**

1907 *Sydow* et *Butler*, Ann. Myc. V, 497

Puccinia rufipes Diet.

1908 *Hennings*, Philip. Journ. Sci. III, C, 42—Manila, on *Imperata arundinacea* (*Copeland*, 44)

Puccinia thwaitesii Berk. et **Brm.**

1875 *Berkeley* et *Broome*, Journ. Linn. Soc. Bot. XIV, 91 (*Ricker* err. cit.)

1900 *Raciborski*, Paras. Alg. und Pilze Javas I, 21

1904 *Sydow*, Monogr. Ured. I, 233

1906 *Patouillard* et *Hariot*, Bull. Soc. Myc. Fr. XXII, 116 (*Puccinia phaeosticta*)

1906 *Sydow* et *Butler*, Ann. Myc. IV, 431

1908 *Hennings*, Philip. Journ. Sci. III, C, 42—Isl. Palmas and Prov. Bataan, on *Justicia gendarussa* (*Merrill*, 3552 and 5345)

Exsiccatus: *Sydow*, Fung. exot. no. 15 - Basagan River, Mindanao, on *Justicia gendarussa* (*Merrill*)

Pucciniostele clarkiana (Barcl.) Diet.

1910 *Dietel*, Ann. Myc. VIII, 312

1912 *Sydow* et *Butler*, Ann. Myc. X, 267

Uredo abri Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 43—Iloilo, on

Abrus precatorius (*Copeland*, 87)

Exsiccatus: *Sydow*, Fung. exot. no. 166

Uredo arthraxonis-ciliaris Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 43—Prov. Benguet, on *Arthraxonis ciliaris* (*Merrill*, 4949)

Uredo castaneae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 43—Balili, Prov. Lepanto, on *Castanea vulgaris* (*Merrill*, 4874)

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 802

Uredo davaoensis Syd.

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 804

Uredo dioscoreae Henn.

1912 *Sydow* et *Butler*, Ann. Myc. X, 171

Uredo hygrophilae Syd.

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 801

Uredo manilensis Syd.

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 799

Uredo philippinensis Syd.

1908 *Hennings*, Philip. Journ. Sci. III, C, 43—Manila, on *Cyperus polystachyus* (*Copeland*, 43)

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 805

Uredo premnae Koord.

1907 *Koorders*, Botan. Untersuch. Java Pilze 199—Java, on *Premna tomentosa* (*Koorders*)

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 800

Uredo rostrupii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 43—Iloilo, on *Fuirena glomerata* (*Copeland*, 84)

Uredo wedeliae-biflorae Syd.

1908 *Hennings*, Philip. Journ. Sci. III, C, 43—Lanang, Samar, on *Wedelia biflora* (*Merrill*, 5230)
1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 796

Uromyces appendiculatus (Pers.) Lk.

Persoon, Obs. I, 17 (*Uredo*)
1801-08 *Persoon*, Synop. Fung. 221 (*Uredo appendiculatus* var. *phaseoli*)
Link, Obs. II, 28
Schweinitz, Syn. Am. Bor. 296 (*Puccinia phaseoli-trilobi*)
1831-33 *Wallroth*, Fl. Crypt. Germ. no. 1785 (*Aecidium phaseolorum*)
1850 *Strauss*, in Wetter. Ann. II, 98 (*Uredo phaseoli*)
1870 *Berkeley* et *Broome*, Fung. Ceylon no. 829 (*Uredo dolichi*)
1872 *Schroeter*, Pilze. Schles. 302
1878 *Winter*, Die Pilze 157 (*Uredo phaseoli*)
DeBary, A. N. S. IV, 20 (*Uredo phaseolorum*)
1882 *Cooke*, Grev. X, 127
1885 *Burrill*, Paras. Fung. III, 161
1888 *DeToni*, Sacc. Syll. Fung. VII, 535 (*Uredo appendiculatus*); 565 (*Uredo dolichi*)
1909 *Sydow*, Monogr. Ured. II
1912 *Sydow* et *Butler*, Ann. Myc. X, 256

Uromyces deeringiae Syd.

1914 *Sydow*, Ann. Myc. XII, 105—Formosa

Uromyces hewettiae Syd.

1908 *Hennings*, Philip. Journ. Sci. III, C, 42—Banton Isl., aecidium on *Hewettia bicolor* (*Merrill*, 4164)
1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 566

Uromyces linearis Berk. et Brm.

1908 *Sydow* et *Butler*, Ann. Myc. IV, 430
1912 *Sydow* et *Butler*, Ann. Myc. X, 256

Uromyces malloti Henn.
1908 *Sydow,* Ann. Myc. VI, 140

Uromyces mucunae Rabh.
1878 *Rabenhorst,* Hedw. XVII, 62
1912 *Sydow* et *Butler,* Ann. Myc. X, 254

Exsiccatus: *Sydow,* Fung. exot. no. 7

Uromyces sojae Syd.
1903 *Hennings,* Hedw. 108 (*Uredo*)—Japan
1905 *Saccardo,* Syll. Fung. XVII, 446
1906 *Sydow,* Ann. Myc. IV, 429
1906 *Sydow* et *Butler,* Ann. Myc. IV, 429
1909 *Sydow,* Monogr. Ured. II, 128

COLEOSPORIACEAE

* **Coleosporium exaci Syd.**
1914 *Sydow,* Ann. Myc. XII, 196—Cotobato, Mindanao, on *Exacis tetragona* (*Robinson,* comm. *Merrill,* 11709)

Coleosporium knoxiae Syd.
1908 *Hennings,* Hedw. XLVII, 252 (*Uredo*)
1908 *Hennings,* Philip. Journ. Sci. III, C, 43 (*Uredo*) —Bued River, Prov. Benguet, on *Knoxia corymbosa* (*Merrill,* 4970)
1912 *Saccardo* et *Trotter,* Syll. Fung. XXI, 798
1914 *Sydow,* Ann. Myc. 109
1914 *Baker,* Leafl. Philip. Bot. VI, 2075 (*Uredo*)
1914 *Sydow,* Ann. Myc. XII, 109—Formosa, on *Knoxia corymbosa* (*Fujikuro,* 89)

Coleosporium merrillii Henn.
1908 *Hennings,* Philip. Journ. Sci. III, C, 42—Baguio, on orchid leaves (*Merrill,* 4906)

1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 723

MELAMPSORACEAE

Schroeteriaster cingens Syd.
1912 *Sydow* et *Butler*, Ann. Myc. X, 270

USTILAGINALES

USTILAGINACEAE

Cintractia axicola (Berk.) Cornu
1885 *Trelease*, Bull. Torr. Bot. Club XII, 65-70
1908 *Hennings*, Philip. Journ. Sci. III, C, 41—Prov. Bulacan, on *Fimbristylis* (*Yoder*)
1912 *Sydow* et *Butler*, Ann. Myc. X, 253

Cintractia cyperi-polystachyi Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 41—Manila, on *Cyperus polystachyus* (*Merrill*, 5195)
1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 510

Cintractia merrillii Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 41—Pauai, Prov. Benguet, on a *Carex* (*Merrill*, 4915)
1914 *Baker*, Leafl. Philip. Bot. VI, 2079 (*Cintractia merrillii; Cintractia muelleri* err. cit. in herb. Bureau of Science)
1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 510

*** Entyloma oryzae Syd.**
1914 *Sydow*, Ann. Myc. XII, 197—Los Baños, on *Oryza sativa* (*Raimundo*, comm. *Baker*, 2203)

Graphiola cylindrospora Syd.
1913 *Sydow*, Ann. Myc. XI, 253—Mt. Maquiling, on a *Livistona* (*Baker*, 84)

Sphacelotheca hydropiperis (Schum.) DeBary

1908 *Hennings*, Philip. Journ. Sci. III, C, 41—Pauai, Prov. Benguet, in flowers of a *Polygonum* (*Merrill*, 4962)
1912 *Sydow* et *Butler*, Ann. Myc. X, 253

*** Ustilago andropogonis-aciculati Petch**

1909 *Petch*, Ann. Bot. Gard. Peradeniya IV, 303
1912 *Saccardo* et *Trotter*, Syll. Fung. XXI, 506
1914 *Sydow*, Philip. Journ. Sci. III, C, 159—Taytay, Palawan, on *Andropogon aciculatus* (*Merrill*, S. 185)

Ustilago bursa Berk.

1854 *Berkeley*, Hook. Journ. Bot. 206—India, on *Anthistira arundinacea*
1888 *DeToni*, Sacc. Syll. Fung. VII, pt. 2, 473

*** Ustilago emodensis Berk.**

1851 *Berkeley*, Hook. Journ. Sci. Bot. III, 210—Queensland, on a *Polygonum*
1886 *Solms*, Ann. Jard. Buitenzorg VI, 79-92 (*Ustilago treubii*)
1886 *Solms*, Bot. Jahresb. 467 (*Ustilago treubii*)
1888 *Berlese* et *DeToni*, Sacc. Syll. Fung. VII, 470
1891 *Saccardo*, Syll. Fung. IX, 282 (*Ustilago treubii*)
1899 *Massee*, Textb. Plant Diseases 216 (*Ustilago treubii*)

Prov. Benguet, on inflorescence of *Polgonum chinense* (*Mearns*). This form was sent to *Mr. Petch* by *Mr. Merrill* and the following is the very interisting note from *Petch* on the Philippine specimen: "It is undoubtedly *Ustilago treubii Solms* although I have not seen this particular form of the gall in Ceylon and it is not figured by *Solms*. *Massee*, Text Book of Plant Diseases 1899, 216 says that *Ustilago treubii Solms* is the same as *Ustilago emodensis Berk.* He has probably seen the type of the latter and may be right, but the identification is certainly not warranted by *Berkeley's* description as quoted in *Saccardo*.

> . . . . . On the whole I think that *Massee* is right and that the species should be called *Ustilago emodensis Berk.*

Ustilago kusanoi Syd.
1902 *Saccardo* et *Sydow*, Syll. Fung. XVI, 368

Exsiccatus: *Sydow*, Fung. exot. no. 167

Ustilago sacchari Rabh.
1877 *Fischer v. Waldheim*, Apercu Syst. des Ustilag. 16
1906 *Sydow* et *Butler*, Ann. Myc. IV, 424
1912 *Sydow* et *Butler*, Ann. Myc. X, 249

Exsiccatus: *Sydow*, Fung. exot. no. 119

Ustilago sorghi (Lk.) Pass.
1847 *Tulasne*, Ann. Sc. Nat. 116 (*Tilletia sorghi-vulgaris*)
1874 *Kuhn*, Sitz. Nat. Ges. Halle (*Ustilago tulasnei*)
1888 *Saccardo*, Syll. Fung. VII, 456

Ustilago tonglinensis Tra. et Erl.
1899 *Saccardo*, Syll. Fung. XIV, 420—Tonglin, Singapore, on *Ischaemum ciliaris* (*Ridley*)
1912 *Sydow* et *Butler*, Ann. Myc. X, 250

Exsiccatus: *Sydow*, Fung. exot. no. 74

LABOULBENIALES

LABOULBENIACEAE

* **Laboulbenia oedionychi Thaxt.**
1914 *Thaxter*, Proc. Amer. Acad. Arts Sci. L, pt. 2, 31—Manila, on an *Oedionychus* (*Banks*)

* **Laboulbenia philippina Thaxt.**
1914 *Thaxter*, Proc. Amer. Acad. Arts Sci. L, pt. 2, 31—Manila, on a *Chrysomelid* near *Rhembastus* (*Banks*)

*** Laboulbenia nodostomae Thaxt.**

1914 *Thaxter*, Proc. Amer. Acad. Arts Sci. L, pt. 2, 30—Mindanao, on a *Nodostoma* (*Oakes Ames*)

PERISPORIALES

ERYSIBACEAE

Phyllactinia suffulta (Rebent) Sacc.

1804 *Rebent*, Prodr. Fl. Neomarch.
1851 *Leveille*, Ann. Sc. Nat. XV, 144 (*Phyllactinia guttata*) *Saccardo*, Mich. II, 50
1882 *Saccardo*, Syll. Fung. I, 5
1914 *Baker*, Leafl. Philip. Bot. VI, 2090—Misplaced to end of *Perisporiaceae*

PERISPORIACEAE

Dimerina graffi Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 122

*** Dimerosporium lussoniense Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 303—Bontoc, Luzon, on a *Pittosporum* (*Van Overbergh*, 2725)

Dimerosporium mindanaense Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 44—Davao, Mindanao, on a *Eugenia* (*Copeland*, 312)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 34

Eurotium repens DeBary

1870 *DeBary*, Beitr. Morph. Phys. der Pilze III, 1
1882 *Saccardo*, Syll Fung. I, 26
1907 *Rehm*, Ann. Myc. V, 207—*Rehm*, Ascom. exsicc. no. 1701
1909 *Dale*, Ann. Myc. VII, 215 (*Aspergillus*)
1910 *Mangin*, Ann. Sci. Nat. IX, Ser. Bot. X, 303
1913 *Saccardo*, Ann. Myc. XI, 312—Antipolo, on *Antidesma ghaesembilla* (*Ramos*)

Meliola acalyphae Rehm
1914 *Rehm,* Ann. Myc. XII, 171—Los Baños, on *Acalypha stipulacea* (*Baker*)—*Rehm,* Ascom. exsicc. no. 2103

* **Meliola aciculosa Wint.** var. **viticis Rehm**
1914 *Rehm,* Leafl. Philip. Bot. VI, 2257—Los Baños, on *Vitex negundo* (*Reyes,* comm. *Baker,* 3224—number wrongly given as 1515)

Meliola acutiseta Syd.
1914 *Baker,* Leafl. Philip. Bot. VI, 2082 (err. typ. *acutisecta*)

* **Meliola aglaiae Syd.**
1914 *Sydow,* Philip. Journ. Sci. IX, C, 159—Taytay, Palawan, on an *Aglaia* (*Merrill,* 8884)

Meliola alstoniae Koord.
1907 *Koorders,* Botan. Untersuch. 170
1913 *Saccardo* et *Trotter,* Syll. Fung. XXII, 53
1914 *Rehm,* Leafl. Philip. Bot. VI, 2258—Los Baños, on *Alstonia macrophylla* (*Teodoro,* comm. *Baker,* 1226)

Meliola amphitricha Fr.
1908 *Rehm,* Ann. Myc. VI, 118—*Rehm,* Ascom. exsicc. no. 1757
1911 *Rehm,* Ann. Myc. IX, 5—*Rehm,* Acom. exsicc. no. 1922
1911 *Sydow* et *Butler,* Ann. Myc. IX, 379
1913 *Miyake,* Bot. Mag. Tokyo XXVII, 38—China, on an *Osmanthus*

Meliola cfr. **amphitricha Fr.**
1908 *Hennings,* Philip. Journ. Sci. III, C, 44—Bued River, Prov. Benguet, on *Viburnum odoratissimum* (*Merrill,* 4960)

Meliola arachnoidea Speg.

1908 *Rehm*, Ann. Myc. vi, 490—*Rehm*, Ascom. exsicc. no. 1798

1909 *Theissen*, Ann. Myc. vii, 348

Meliola arborescens Syd.

1913 *Sydow*, Ann. Myc. xi, 256—Todaya, on a *Eugenia* (*Elmer*, 11328)

Meliola bidentata Cke.

1883 *Spegazzini*, Fung. Guar. Pug. ii, no. 42

1888 *Spegazzini*, Fung. Guar. Pug. iii, no. 80

1892 *Gaillard*, Bull. Soc. Myc. Fr. viii, 183—Paraguay

Meliola callicarpae Syd.

1913 *Rehm*, Leafl. Philip. Bot. vi, 2084—(*Meliola cookeana* non *Speg.*)

1914 *Baker*, Leafl. Philip. Bot. vi, 2085 (Under *Meliola cookeana* which drops from the list)

Meliola callista Rehm

1914 *Rehm*, Leafl. Philip. Bot. vi, 2191—Los Baños, on *Premna odorata* (*Reyes*, comm. *Baker*, 1946, 1940, 1830 and 3630. The last number was wrongly given as 1545)

Meliola clerodendricola Henn.

Exsiccatus: *Sydow*, Fung. exot. no. 171

Meliola cylindrophora Rehm

1913 *Rehm*, Philip. Journ. Sci. viii, C, 181 (*Meliola stenospora* non *Wint.*)

1913 *Rehm*, Philip. Journ. Sci. viii, C, 252 (*Meliola stenospora* non *Wint.*)

1914 *Rehm*, Leafl. Philip. Bot. vi, 2258—Los Baños, on *Premna cumingiana* (*Baker*, 2395)

1914 *Rehm*, Ann. Myc. XII, 165—Los Baños, on *Itea maesifolia* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2076
1914 *Baker*, Leafl. Philip. Bot. VI, 2085 and 2089 (The above two references under *Meliola stenospora* go to *Meliola cylindrophora*, fide *Rehm*; change number 394 to 3518)

Exsiccatus: *Sydow*, Fung. exot. no. 172

Meliola dichotoma Berk. et Curt.
1862 *Berkeley* et *Curtis*, N. Pac. Explor. Exped. Bot. 130—Japan
1882 *Saccardo*, Syll. Fung. I, 71

*** Meliola forbesii Gaill.**
1892 *Gaillard*, Gen. Meliola 110
1895 *Saccardo*, Syll. Fung. XI, 268
1914 *Rehm*, Leafl. Philip. Bot. VI, 2194—Los Baños, on *Merremia umbellata* (*Raimundo*, comm. *Baker*, 1978[b])

Meliola hyptidis Syd.
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 52

Meliola insignis Gaill.
1892 *Gaillard*, Gen. Meliola 44—Sumatra
1895 *Saccardo*, Syll. Fung. XI, 261

Meliola intricata Syd.
1913 *Sydow*, Philip. Journ. Sci. VIII, C, 268—Manila, on *Scirpus grossus* (*Merrill*, 7152)
1914 *Baker*, Leafl. Philip. Bot. VI, 2086

*** Meliola ipomoeae Rehm**
1914 *Rehm*, Ann. Myc. XII, 171—Los Baños, on "*Ipomoea*" (*Baker*)—*Rehm*, Ascom. exsicc. no. 2104 (This is probably on a *Merremia*)

Meliola jasminicola Henn.

1895 *Hennings*, Hedw. 11
1895 *Saccardo*, Syll. Fung. XI, 265

Meliola maesae Rehm

1913 *Sydow*, Philip. Journ. Sci. VIII, C, 479 (*Meliola peregrina*)
1914 *Rehm*, Ann. Myc. 171—Los Baños, on *Maesa laxa* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2105

Meliola mangiferae Erl.

1904 *Earle*, Bull. N. Y. Bot. Gard. 307—Jamaica and Porto Rico
1911 *Sydow* et *Butler*, Ann. Myc. IX, 382
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 48

Meliola merremiae Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2193—Los Baños, on *Merremia incisa* (*Raimundo*, comm. *Baker*, 1719 and 1840; on *Merremia umbellata* (*Baker*, 1778 a)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 160—Mt. Capoas, Palawan, on *Merremia nymphaeifolia* (*Merrill*, 9090); on *Merremia vitifolia* (*Merrill*, 9085)

* **Meliola panici Erl.**

1901 *Earle*, Muhlenb. 12—Porto Rico, on *Panicum latifolium*
1905 *Saccardo*, Syll. Fung. XVII, 550
1914 *Rehm*, Leafl. Philip. Bot. VI, 2193—Los Baños, on a *Panicum* (*Reyes*, comm. *Baker*, 1204)

Meliola parenchymatica Gaill.

1892 *Gaillard*, Bull. Soc. Myc. Fr. VIII, 180

Meliola pulcherrima Syd.

1913 *Sydow*, Ann. Myc. XI, 254—Antipolo, Prov. Rizal, on *Ficus benjamina* (*Ramos*, comm. *Merrill*, S. 121)

Exsiccatus: *Sydow*, Fung. exot. no. 124

Meliola quadrispina Rac.

1900 *Raciborski*, Paras. Alg. und Pilze Javas III, 33

1913 *Rehm*, Philip. Journ. Sci. III, C, 181 (*Meliola quadrifurcata*)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2194—Los Baños, on a *Merremia* (*Reyes*, comm. *Baker*, 1538)

Meliola sidae Rehm

1914 *Rehm*, Ann. Myc. XII, 165—Los Baños on *Sida javensis* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2077

Meliola substenospora v. Hoehn.

1909 *v. Hoehnel*, Sitzb. k. Ak. Wiss. Wien CXVIII, Abth. 1, 317

1909 *Rehm*, Ann. Myc. VII, 529—*Rehm*, Ascom. exsicc. no. 1874

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 56

Exsiccatus: *Sydow*, Fung. exot. no. 173

* **Meliola substenospora v. Hoehn.** forma **rottboelliae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2193—Los Baños, on *Rottboellia exaltata* (*Reyes*, comm. *Baker*, 3511—this number was wrongly given as 1255; *Raimundo*, comm. *Baker*, 1839)

Meliola tamarindi Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 29

* **Meliola uncariae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2192—Los Baños, on *Uncaria perrottetii* (*Baker*, 1280)

Meliola uvariae Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2192 and 2258—Los Baños, on a *Uvaria* (*Baker*, 2139)

Meliola vilis Syd.

1914 *Rehm*, Leafl. Philip. Bot. VI, 2258—Los Baños, on a *Callicarpa* (*Reyes*, comm. *Baker*, 1949 [a])

Parodiella grammodes (Kze.) Cke.

1913 *Sydow*, Ann. Myc. XI, 327—India, on *Desmodium* and *Crotalaria*

1914 *Sydow*, Philip. Journ. Sci. IX, C, 160—Taytay, Palawan, on *Desmodium capitatum* (*Merrill*, 8897)

Parodiella puncta (Cke.) Sacc.

1882 *Cooke*, Grev. X, 128 (*Dothidea*)

1882 *Saccardo*, Syll. Fung. I, 718

1908 *Hennings*, Hedw. XLVII, 253

1908 *Hennings*, Philip. Journ. Sci. III, C, 44 (*Parodiella pumila*)—Prov. Benguet, on *Crotalaria* and *Smithia ciliata* (*Merrill*, 4948 and 4969)

HEMISPHAERIALES

MICROTHYRIACEAE

This family as now defined (fide *Theissen*) includes *Asterina*, etc., and also *Lembosiella Sacc.*, *Lembosiopsis Theiss.*, *Lembosina Theiss.*, *Morenoina Theiss.*, *Lembosia Lev.* and *Morenoella Speg.*

Asterina capparidis Syd. et Butl.

1914 *Rehm*, Leafl. Philip. Bot. VI, 2277—Los Baños, on *Capparis macrantha* (*Raimundo*, comm. *Baker*, 1233)

Asterina cassiae Syd.

1914 *Rehm*, Ann. Myc. XII, 173—Lamao, Prov. Bataan, on *Glochidion llanosii* (*Graff*)—*Rehm*, Ascom. exsicc. no. 2119

Exsiccatus: *Sydow*, Fung. exot. no. 135, on *Glochidion llanosii* (err. cit. *Cassia*)

*** Asterina colliculosa Speg.**

1889 *Spegazzini*, Fung. Puigg. no. 347—Brazil, on a *Eugenia*
1891 *Saccardo*, Syll. Fung. IX, 386
1941 *Rehm*, Ann. Myc. XII, 173—Los Baños, on a *Eugenia* (*Baker*, 681)—*Rehm*, Ascom. exsicc. no. 2120

Asterina decipiens Syd.

1914 *Rehm*, Leafl. Philip. Bot. VI, 2277—Los Baños, on *Champereia manillana* (*Reyes*, comm. *Baker*, 1543)

Asterina derridis Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 52—Davao, Mindanao, on *Derris uliginosa* (*Copeland*, 353)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 537

*** Asterina dilleniae Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 181—Taytay, Palawan, on *Dillenia* (*Merrill*, 8774)

Asterina elmeri Syd.

1914 *Sydow*, Philip. Journ. Sci. IX, C, 181—Taytay, Palawan, on *Champereia manillana* (*Merrill*, 8801)

Asterina lawsoniae Henn. et **Nym.**

1902 *Saccardo* et *Sydow*, Syll. Fung. XVI, 646
1913 *Theissen*, Abth. z. Bot. Ges. Wein VII, 3
1914 *Rehm*, Leafl. Philip. Bot. VI, 2227—Los Baños, on *Lawsonia inermis* (*Reyes*, comm. *Baker*, 1543)
1914 *Rehm*, Ann. Myc. XII, 168—Los Baños, on *Lawsonia inermis* (*Reyes*, comm. *Baker*)—*Rehm*, Ascom. exsicc. no. 2097

*** Asterina lobulifera Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 181—Taytay, Palawan, on a *Glochidion* (*Merrill*, 8737)

*** Asterina lophopetali Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2228—Los Baños, on *Lophopetalum toxicum* (*Reyes*, comm. *Baker*, 1759 [a])

*** Asterina nodulifera Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 180—Taytay, Palawan, on *Angelesia splendens* (*Merrill*, 8901)

Asterina pemphidioides Cke.

Cooke, Grev. V, 16—India

1882 *Saccardo*, Syll. Fung. I, 40

1914 *Sydow*, Philip. Journ. Sci. IX, C, 181—Taytay, Palawan, on a *Eugenia* (*Merrill*, 8738, 8788 and S. 179); Mt. Capoas, Palawan, on a *Eugenia* (*Merrill*, 9082)

Asterina sponiae Rac.

1902 *Saccardo* et *Sydow*, Syll. Fung. XVI, 647

Exsiccatus: *Sydow*, Fung. exot. no. 186

*** Asterinella calami Syd.**

1904 *Sydow*, Philip. Journ. Sci. IX, C, 182—Mt. Capoas, Palawan, on a *Calamus* (*Merrill*, 9081)

*** Asterinella palawanensis Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 182—Taytay, Palawan, on a *Plectronia* (*Merrill*, 8887 [b])

*** Asterinella ramuligera Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 182—Taytay, Palawan, on *Microdesmis casearifolia* (*Merrill*, 8793)

Asterinella obesa Syd.

1914 *Baker*, Leafl. Philip. Bot. VI, 2094 (Under this reference *Ramos* 16976 is indeterminable and certainly not *Asterinella obesa*, fide *Sydow*; this same number is erroneously repeated on p. 2100 under *Hypocrella salaccensis*, as per specimen in Bureau of Science)

Lembosia congregata Syd.

1913 *Saccardo* et *Sydow*, Syll. Fung. XXII, 562

Lembosia crustacea (Cke.) Theiss.

1885 *Cooke*, Grev. XIV, 13 (*Asterina*)
1890 *Saccardo*, Syll. Fung. VIII, 715 (*Lembosia diffusa* var. *breviuscula*)
1891 *Saccardo*, Syll. Fung. IX, 380
1897 *Paoli* et *Saccardo*, Malp. XI, 527 (*Lembosia diffusa Wint.* var. *diffusa*)
1900 *Raciborski*, Paras. Alg. und Pilze Javas III, 28 (*Morenoella gedeana*)
1902 *Saccardo* et *Sydow*, Syll. Fung. XIV, 654 (*Morenoella gedeana*)
1904 *Sydow*, Ann. Myc. II, 162 (*Morenoella breviuscula*)
1905 *Saccardo*, Syll. Fung. XVII, 899 *Lembosia breviuscula*)
1910 *Sydow*, Ann Myc. VII, 40 (*Lembosia congregata*)
1910 *v. Hoehnel*, Fragm. z. Myc. X, no. 455 (*Morenoella breviuscula*)
1913 *Theissen*, Ann. Myc. XI, 432
1914 *Baker*, Leafl. Philip. Bot. VI, 2138 (*Lembosia congregata*); and 2137 (*Morenoella breviuscula*)

Lembosia dipterocarpi Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 53—Lamao, Prov. Bataan, on *Dipterocarpus grandiflorus* (*Copeland*, 280)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 561

1913 *Theissen*, Ann. Myc. XI, 457—Luzon, on dying leaves of *Dipterocarpus grandiflorus* (*Copeland*, 280)

Lembosia eugeniae Rehm

1913 *Rehm*, Ann. Myc. XI, 394—Los Baños, on a *Eugenia* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2071

* **Lembosia inconspicua Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 183—Taytay, Palawan, on a *Guioa* (*Merrill*, S. 176)

Lembosia javanica (Pat.) Rac.

1897 *Patouillard*, Ann. Jard. Bot. Buit. I, suppl. 122 (*Schneepia*)

1899 *Saccardo* et *Sydow*, Syll. Fung. XIV, 709 (*Parmularia*)

1900 *Raciborski*, Paras. Alg. und Pilze Javas II, 20

1909 *Rehm*, Ann. Myc. VII, 403—*Rehm*, Ascom. exsicc. no. 1839

1908 *Hennings*, Philip. Journ. Sci. III, C, 53—Prov. Pampanga, on leaves of *Nipa fruticans* (*Merrill*, 4248)

1913 *Theissen*, Ann. Myc. XI, 453

1914 *Sydow*, Philip. Journ. Sci. IX, C, 184 (*Parmularia*)—Taytay, Palawan, on leaves of *Nipa fruticans* (*Merrill*, S. 186)

* **Lembosia nervisequia Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 183—Taytay, Palawan, on a *Litsea* (*Merrill*, 8789)

Microthyriella philippinensis Syd.

1913 *Sydow*, Ann. Myc. XI, 312 (on *Homalonema philippinensis*—err. cit. *Aglaonema*)

1913 *Sydow*, Ann. Myc. XI, 405—Los Baños, on *Homalonema philippinensis*—err. cit. *Aglaonema* (*Reyes*, comm. *Baker*, 1417)

Microthyrium elatum Rehm
1914 *Baker*, Leafl. Philip. Bot. VI, 2095 (Change number 614 to 3515)

Morenoella irregularis (Syd.) Theiss.
1911 *Sydow*, Leafl. Philip. Bot. V, 1540 (*Asterina*)
1913 *Theissen*, Ann. Myc. XI, 458
1914 *Baker*, Leafl. Philip. Bot. VI, 2092 (*Asterina*)

* **Morenoella memecyli Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 183—Taytay, Palawan, on *Memecylon lanceolatum* (*Merrill*, 8773 ^{b})

Morenoella pothoidei (Rehm) Theiss.
1913 *Rehm*, Philip. Journ. Sci. VIII, C, 191 (*Lembosia*)
1913 *Theissen*, Ann. Myc. XI, 442
1914 *Baker*, Leafl. Philip. Bot. VI, 2138 (*Lembosia*)

Morenoella transversalis (Syd.) Theiss.
1911 *Sydow*, Leafl. Philip. Bot. V, 1542 (*Asterina transversalis*)
1913 *Theissen*, Ann. Myc. XI, 457
1914 *Baker*, Leafl. Philip. Bot. VI, 2093 (*Asterina transversalis*)

* **Myiocopron conjunctum Syd.**
1914 *Sydow*, Ann. Myc. XII, 200—Los Baños, on leaves of a *Daemonorops* (*Baker*, 2228 and 2081)

* **Seynesia alstoniae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2227—Los Baños, on *Alstonia macrophylla* (*Reyes*, comm. *Baker*, 1748 and 1927; *Raimundo*, comm. *Baker*, 1789)

Seynesia scutellum Syd.
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 524

TRICHOPELTACEAE

1914, *Theissen,* Central. Bakter. xxxix, 629

*** Gilletiella latemaculans Rehm**

1914 *Rehm,* Leafl. Philip. Bot. vi, 2278—Los Baños, on *Arenga saccharifera* (*Reyes,* comm. *Baker,* 1433 [a])

1914 *Rehm,* Ann. Myc. xii, 173—Los Baños, on dead petioles of *Arenga saccharifera* (*Baker*)—*Rehm,* Ascom. exsicc. no. 2118

HEMISPHAERIACEAE

This family as now defined (fide *Theissen*) includes *Dictyothyrina Theiss., Dictyothyrium Theiss., Dictyopeltis Theiss., Micropeltis Mont., Micropeltella Syd., Scolecopeltis Speg,. Ophiopeltis Alm.* et *Cam., Clypeolum Speg., Phragmothyriella v. Hoehn.* and *Stephanotheca Syd.*

*** Dictyothyrium giganteum Syd.**

1914 *Sydow,* Philip. Journ. Sci. ix, C, 178—Taytay, Palawan, on *Memecylon lanceolatum* (*Merrill,* 8773 [a] and 8811)

*** Micropeltella clavispora Syd.**

1913 *Sydow,* Ann. Myc. xi, 405—Prov. Pangasinan, on *Memecylon lanceolatum* (*Agama*)

*** Micropeltella coerulescens Rehm**

1898 *Rehm,* Hedw. 326 (*Micropeltis*)

1914 *Rehm,* Leafl. Philip. Bot. vi, 2278—Los Baños, on *Hoya luzonensis* (*Baker,* 2501 [a])

Micropeltella leucoptera (Penz. et Sacc.) Syd.

1913 *Sydow,* Ann. Myc. xi, 404

1914 *Baker,* Leafl. Philip. Bot. vi, 2095 (*Micropeltis*)

*** Micropeltella merrillii Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 178—Taytay, Palawan, on a *Schefflera* (*Merrill*, 8725 type); on *Glycosmis cochinchinensis* and *Celastrus paniculatus* (*Merrill*, 8746, 8754 and 8820)

Micropeltella schmidtiana (Rost.) Rehm

1914 *Baker*, Leafl. Philip. Bot. VI, 2095 (*Micropeltis*)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2228—Los Baños, on dead *Gigantochloa scribneriana* (*Baker*, 331)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2277—Los Baños, on *Lophopetalum toxicum* (*Reyes*, comm. *Baker*, 1759 b)

*** Micropeltis aeruginascens Rehm**

1913 *Rehm*, Philip. Journ. Sci. VIII, C, 394 (*Micropeltis applanata Mtg.* non *Mont.*) Number 1025 in this reference should be changed to 3523

1913 *Rehm*, Ann. Myc. XI, 395—*Micropeltis applanata Mtg.* var. *aeruginascens*)—Los Baños, on *Rourea erecta* (*Raimundo*, comm. *Baker*, 1452)—*Rehm*, Ascom. exsicc. no. 2074

1914 *Baker*, Leafl. Philip. Bot. VI, 2094 (*Micropeltis applanata Mtg.* non *Mont.*) *Micropeltis applanata Mont.* to be dropped from the list)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2228—Los Baños, on *Rourea erecta* (*Raimundo*, comm. *Baker*, 2056); on *Euonymus javanica* (*Baker*, 1765); on *Celtis philippinensis* (*Reyes*, comm. *Baker*, 2028)

Micropeltis bambusicola Henn.

1900 *Hennings*, Engl. Bot. Jahrb. 273

1908 *Hennings*, Philip. Journ. Sci. III, C, 52—Todaya, Mindanao, on bamboo (*Copeland*, 1229)

Micropeltis consimilis Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2229—Los Baños, on

Canarium luzonicum (*Raimundo*, comm. *Baker*, 1938)

* **Micropeltis pometiae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2229—Los Baños, on *Pometia pinnata* (*Baker*, 2163)

* **Micropeltis serica Rehm**

1901 *Rehm*, Hedw. 122

v. Hoehnel, Fragm. Myc. XIV, 9

1914 *Rehm*, Leafl. Philip. Bot. VI, 2229—Los Baños, on *Symphorema luzonicum* (*Reyes*, comm. *Baker*, 1549 a)

* **Micropeltis** sp. dub.

1914 *Rehm*, Leafl. Philip. Bot. VI, 2230—Los Baños, on *Guioa perrottetii* (*Reyes*, comm. *Baker*, 1933); on *Derris philippinensis* (*Baker*, 2028)

* **Micropeltis** sp. dub.

1914 *Rehm*, Leafl. Philip. Bot. VI, 2230—Los Baños, on *Homalonema philippinensis* not on *Aglaonema* (*Raimundo*, comm. *Baker*, 1720)

Parmularia hymenolepidis Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 53—Mt. Apo, Mindanao, on *Hymenolepis spicata* (*Copeland*, 1080)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 554

* **Phragmothyriella bakeri Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2230—Los Baños, on dead *Schizostachyum* (*Reyes*, comm. *Baker*, 1968 b); on leaves of *Eugenia* (*Baker*, 681 b)

* **Stephanotheca micromera Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 180—Lake Manguao, Palawan, on *Taxotrophis ilicifolia* (*Merrill*, 8979)

ENGLERULACEAE

Englerula medinillae (Rac.) v. Hoehn.

1909 *Raciborski*, Bull. Ak. Sc. Cracovie 373 (*Balladyna*)
1910 *v. Hoehnel*, Fragm. Myc. IX, 9; X, 64
1914 *Rehm*, Leafl. Philip. Bot. VI, 2257 (*Balladyna*)—Mt. Maquiling, on *Medinilla myriantha* (*Baker*, 2362)

*** Theissenula clavispora Syd.**

1914 *Sydow*, Ann. Myc. XII, 198—Los Baños, on dying leaves of *Schizostachyum acutiflorum* (*Reyes*, comm. *Baker*, 1937)

CAPNODIACEAE

Aithaloderma clavatisporum Syd.

1913 *Sydow*, Ann. Myc. XI, 257—Los Baños, on *Voacanga globosa* (*Baker*, 795)
1914 *Baker*, Leafl. Philip. Bot. VI, 2096—(Under this reference change number 1316 to 1163, and 1122 to 1222)

Exsiccatus: *Sydow*. Fung. exot. no. 174

*** Balladyna melodori Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 160—Taytay, Palawan, on a *Melodorum* (*Merrill*, 8885 type and 8795)

Balladyna velutina (Berk. et Curt.) v. Hoehn.

1862 *Berkeley* et *Curtis*, Proc. Am. Acad. Arts Sci. 129 (*Asterina*)
1882 *Saccardo*, Syll. Fung. I, 43
1914 *Baker*, Leafl. Philip. Bot. VI, 2081—Wrongly placed in *Perisporiaceae*
1914 *Sydow*, Philip. Journ. Sci. IX, C, 160—Taytay,

Palawan, on *Gardenia glutinosa* (*Merrill*, 8792 and 8891); on a *Plectronia* (*Merrill*, 8887 [a]); Lake Manguao, Palawan, on a *Gardenia* (*Merrill*, 8974)

*** Capnodium footii Berk. et Desm.**

1849 *Berkeley* et *Desmazieres*, Moulds Ref. Fumago 13 (*Microxyphium*)
1882 *Saccardo*, Syll. Fung. I, 80
1913 *Saccardo*, Ann. Myc. XI, 312—Palawan, on leaves of *Cocos nucifera* (*E. Fenix*)

*** Dimerosporina dinochloae Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 161—Mt. Capoas, Palawan, on *Dinochloa scandens* (*Merrill*, 9089); Taytay, on the same host (*Merrill*, 8736)

Dimerosporina pusilla Syd.

1914 *Baker*, Leafl. Philip. Bot. VI, 2082—Wrongly placed in *Perisporiaceae*

Limacinula malloti Rehm

1913 *Rehm*, Ann. Myc. XI, 395—Los Baños, on *Mallotus philippinensis* (*Baker*, 878)—*Rehm*, Ascom. exsicc. no. 2075

HYPOCREALES

NECTRIACEAE

*** Nectria ambigua Penz. et Sacc.**

1897 *Penzig* et *Saccardo*, Malp. XI, 511—Java
1899 *Saccardo* et *Sydow*, Syll. Fung. XIV, 631
1914 *Rehm*, Leafl. Philip. Bot. VI. 2276—Los Baños, on dead *Spondias* (*Baker*, 1574)

*** Nectria episphaeria (Tode) Fr.**

1790 *Tode*, Fung. Meckl. II, 211 (*Sphaeria*)
1818 *Ehrenberg*, Sylv. Myc. Berol. 29 (*Sphaeria erythrococcos*)

1828 *Fries*, Elench. Fung. II, 93 (*Sphaeria*)
1849 *Fries*, Summ. Veg. Scand. 388
1883 *Saccardo*, Syll. Fung. II, 497
1909 *Rehm*, Ann. Myc. VII, 530—*Rehm*, Ascom. exsicc. no. 585 c
1911 *Theissen*, Ann. Myc. IX, 49
1914 *Rehm*, Leafl. Philip. Bot. VI, 2275—Los Baños, on *Valsaria* and on *Ficus* (*Raimundo*, comm. *Baker*, 1893); on *Eutypa* and on *Streblus asper* (*Raimundo*, comm. *Baker*, 1858 c)

*** Nectria peziza (Tode) Fr.** subsp. **reyesiana Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 305—Los Baños, on dead bark (*Reyes*, comm. *Baker*, 1609)

*** Nectria sanguinea (Sibth.) Fr.**
1849 *Fries*, Summ. Veg. Scand. 380
1883 *Saccardo*, Syll. Fung. II, 493
1911 *Theissen*, Ann. Myc. IX, 49
1911 *Strasser*, Ann. Myc. IX, 76
1914 *Rehm*, Leafl. Philip. Bot. VI, 2276—Los Baños, on dead limbs (*Copeland*, comm. *Baker*, 1255)

*** Paranectria luxurians Rehm**
1914 *Rehm*, Ann. Myc. XII, 173—Los Baños, on *Meliola maesae Rehm* on *Maesa laxa* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2116

HYPOCRACEAE

Calonectria copelandii Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 45—Santa Cruz, Mindanao, on orchid number 1316 (*Copeland*, 1317)

Gibberella creberrima Syd.
1914 *Baker*, Leafl. Philip. Bot. VI, 2097—Change number 1029 to 3525

1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Taytay, Palawan, on living *Scleria* (*Merrill* 8732)

*** Gibberella pulicaria (Fr.) Sacc.**

Fries, Syst. Myc. II, 417 (*Sphaeria*)
Cesati et *de Notaris*, Schema. Fung. 412 (*Botryosphaeria*)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2225—Los Baños, on *Leucaena glauca* (*Raimundo*, comm. *Baker*, 1586 b)

*** Gibberella saubinetii (Mont.) Sacc.**

1856 *Montagne*, Syll. 252 (*Gibbera*)
1863 *de Notaris*, L. Fl. It. tab. 92, p. 84 (*Botryosphaeria dispersa*)
1872 *Niessl*, Beitr. 45 (*Botryosphaeria*)
1873 *Saccardo*, Mycol. Venet. Sp. 118
1877 *Saccardo*, Mich. I, 513
1883 *Saccardo*, Syll. Fung. II, 554
1914 *Naoumoff*, Bull. Soc. Myc. Fr. XXX, 54-63
1914 *Rehm*, Leafl. Philip. Bot. VI, 2225—Los Baños, on dead stems of *Hibiscus esculentus* (*Raimundo*, comm. *Baker*, 1592)

*** Hypocrea mellea Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2276—Mt. Maquiling, on a decorticated fallen branch (*Baker*, 2724)

*** Hypocrea mellea Rehm ochracea** var. **(Pat.) Rehm**

1893 *Patouillard*, Bull. Soc. Myc. Fr. 155 (*Hypocrea ochracea*)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2277—Los Baños, on a dead *Calamus* (*Sablan*, comm. *Baker*, 2549)

Hypocrea rufa (Pers.) Fr.

1910 *Medisch*, Jahrb. für Wiss. Bot. XLVIII, 591-631
1911 *Theissen*, Ann. Myc. IX, 60

Malmeomyces pulchellus Starb.
1911 *Theissen*, Ann. Myc. IX, 54

Megalonectria pseudotrichia (Schw.) Speg.
Schweinitz, Journ. Acad. Nat. Sc. Phila. II, 289
1911 *Theissen*, Ann. Myc. IX, 64
1908 *Hennings*, Philip. Journ. Sci. III, C, 44—Prov. Rizal, on dry twigs of *Pithecolobium dulcis* (*Foxworthy*, 14); Manila, on dead *Hibiscus rosa sinensis* (*Merrill*, 4116); Panay (*Copeland*)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2225—Los Baños, on dead fallen limbs (*Baker*, 2165)

*** Nectriella ptychospermatis Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2275—Los Baños, on *Ptychosperma macarthurii* (*Reyes*, comm *Baker*, 1439)

*** Ophionectria theobromae (Pat.) Duss**
1903 *Duss*, Ex. Champ. Gaud. 81
Howard, West Ind. Bull. II, 200 (*Nectria*)
Stockdale, West Ind. Bull. IX, 171 (*Nectria*)
1908 *Massee*, Kew Bull. 218 (*Nectria*)
1910 *Bancroft*, Handb. Diseas. West Ind. Pl. tab. 3, fig. 8-10 (*Nectria*)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2226—Los Baños, on limbs of *Theobroma cacao* (*Raimundo*, comm. *Baker*, 1637 b)

*** Trichonectria bambusicola Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2226—Los Baños, on leaves of *Bambusa blumeana* (*Reyes*, comm. *Baker*, 1655)

CLAVICIPITACEAE

*** Epichloe warburgiana Magn.** var. **donacis Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2225—Los Baños,

in flowers of *Donax cannaeforme* (*Raimundo*, comm. *Baker*, 1660)

Hypocrella botryosa Syd.

1910 *Sydow*, Ann. Myc. VIII, 39—Dumaguete (Cuernos Mts.), Negros, on a *Cyperaceae* (*Elmer*, 9441)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 506

*** Hypocrella pernettiae Pat.**

1897 *Patouillard*, Ann. Jard. Buit. suppl. I, 125
1914 *Rehm*, Leafl. Philip. Bot. VI, 2276—Los Baños, on *Ficus ulmifolia* (*Raimundo*, comm. *Baker*, 1973[b])

Hypocrella salaccensis (Rac.) Petch

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 500
1914 *Baker*, Leafl. Philip. Bot. VI, 2100—*Ramos* 16976 is indeterminable and not referable here, fide *Sydow*

Exsiccatus: *Sydow*, Fung. exot. no. 84

Hypocrella schizostachyi Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 45—Prov. Rizal, on a living *Schizostachyum* (*Foxworthy*, 46)

Ustilaginoidea virens (Cke.) Tak.

1878 *Cooke*, Grev. VII not VIII, 15 (*Ustilago virens*)
1895 *Brefeld*, Untersuch. 12
1900 *Raciborski*, Paras. Alg. und Pilze Javas III, 24

Exsiccatus: *Sydow*, Fung. exot. no. 147

DOTHIDEALES

DOTHIDEACEAE

*** Actinodothis piperis Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 175—Taytay, Palawan, on living leaves of a *Piper* (*Merrill*, 8819 the type and 8851); Mt. Capoas, Palawan, on a *Piper* (*Merrill*, 9092)

Auerswaldia arengae Rac.

1908 *Hennings*, Philip. Journ. Sci. III, C, 47—Bongabon River, Mindoro, on a *Caryota* (*Whitford* 1373 [a])
1909 *Rehm*, Ann. Myc. VII, 529—*Rehm*, Ascom. exsicc. no. 1872
1913 *Rehm*, Philip. Journ. Sci. VIII, C, 395 (*Auerswaldia decipiens*)
1913 *Rehm*, Leafl. Philip. Bot. VI, 1936 (*Auerswaldia decipiens*)
1914 *Baker*, Leafl. Philip. Bot. VI, 2101 (*Auerswaldia decipiens*)

Auerswaldia copelandii Syd.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 428

Auerswaldia derridis Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 47—Alag River, Mindoro, on a *Derris* (*Merrill*, 5544)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 428
1914 *Rehm*, Leafl. Philip. Bot. VI, 2222—Los Baños, on *Derris elliptica* (*Baker*, 1985)

Auerswaldia examinans (Mont. et Berk.) Sacc.

Montagne et *Berkeley*, Pl. Javan. 520 (*Dothidea*)
Penzig et *Saccardo*, Malp. IX, 391 (*Tympanopsis coelosphaerioides*)
1883 *Saccardo*, Syll. Fung. II, 626
1914 *Theissen* et *Sydow*, Ann. Myc. XII, 180
1914 *Rehm*, Leafl. Philip. Bot. VI, 2274—Los Baños, on dead limbs on the ground (*Baker*, 2180)

* **Auerswaldia gigantochloae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2222—Los Baños, on *Gigantochloa scribneriana* (*Baker*, 1735)

* **Auerswaldia lophiostomaceae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2274—Los Baños, on dead petioles of *Arenga saccharifera* (*Reyes*, comm. *Baker*, 2545 b)

Auerswaldia merrillii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 47—Mt. Halcon, Mindoro, on a *Freycinetia* (*Merrill*, 5526)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 429

* **Auerswaldia pandani Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2273—Mt. Banahao, on dead leaf bases of *Pandanus utilissimus* (*Baker*, 2236)

* **Aulacostroma palawanense Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 176—Taytay, Palawan, on *Pandanus merrillii* (*Merrill*, S. 175 and 8751)

* **Balansia claviceps Speg.**

1883 *Spegazzini*, Fung. Guar. I, no. 253
1889 *Rehm*, Exot. Ascom. 302 (*Claviceps philippi*)
1891 *Saccardo*, Syll. Fung. IX, 997 (*Balansia claviceps*) and 998 (*Claviceps philippi*)
1898 *Raciborski*, Pflanzenkrankh. 906
1906 *Raciborski*, Japan. Hypocr. Bull. Soc. Cracovie 906
1914 *Rehm*, Leafl. Philip. Bot. VI, 2226—Los Baños, on *Panicum carinatum* (*Raimundo*, comm. *Baker*, 326); on *Panicum nodosum* (*Baker*, 1767)

* **Cyclodothis pulchella Syd.**

1913 *Sydow*, Ann. Myc. XI, 266—Todaya (Mt. Apo), Mindanao, on *Piper corylistachyon* (*Elmer*, 11163)

*** Heterodothis leptotheca Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 171—Taytay, Palawan, on *Glycosmis cochinchinensis* (*Merrill*, 8744)

*** Homostegia fusispora Syd.**
1910 *Sydow*, Ann. Myc. VIII, 39—Dumaguete (Cuernos Mts.), Negros, on living leaves of a *Bambusa* (*Elmer*, 10140)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 441

*** Microdothella culmicola Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 169—Lake Manguao, Palawan, on dead *Ischaemum* (*Merrill*, 8952 type); Silanga, Palawan, on dead *Chloris incompleta* (*Merrill*, 8932)

Munkiella melastomata v. Hoehn.
1909 *v. Hoehnel*, Sitz. Ak. Wiss. Wien CXVIII, 1220—Java, on *Melastoma*
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 412 (*Phyllachora aggregatula*); 434 (*Munkiella melastomata*)

Ophiodothis cfr. **vorax (Berk. et Curt.) Sacc.**
1908 *Hennings*, Philip. Journ. Sci. III, C, 47—Prov. Benguet, on grass stems (*Elmer*, 6373)

*** Palawania cocoes Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 172—Taytay, Palawan, on dead spathes of *Cocos nucifera* (*Merrill*, 8764)

*** Palawania grandis (Niessl) Syd.**
Niessl, Rebent Fung. Eur. no. 2467 (*Microthyrium grande*)
1886 *Winter*, Hedw. 107 (*Seynesia grandis*)

1899 *Hennings* et *Nym*, Warb. Monsunia 160 (*Seynesia calamicola*)

1914 *Sydow*, Philip. Journ. Sci. IX, C, 172—Taytay, Palawan, on dead petioles and rachis of a *Calamus* (*Merrill*, 8739, 8757 and 8794); on dead leaf rachis of *Oncosperma horrida* (*Merrill*, 8808); on dead *Flagellaria indica* (*Merrill*, 8872); on dead *Drynaria quercifolia* (*Merrill*, 8847)

*** Phaeodothis gigantochloae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2223—Los Baños, on dead *Gigantochloae scribneriana* (*Baker*, 1257 and 2823—The last number was wrongly cited as 1256)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2275—Los Baños, on *Schizostachyum* (*Baker*, 2307 a)

Phyllachora apoensis Syd.

1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Taytay, Palawan, on *Ficus* (*Merrill*, 8888)

Phyllachora ardisiae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 45—Prov. Benguet, on *Ardisia candolleana* (*Merrill*, 4940)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 418

Phyllachora canarii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 45—Semerara, on *Canarium luzonicum* (*Merrill*, 4138)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 411

1914 *Baker*, Leafl. Philip. Bot. VI, 2104—Under this reference change number 870 to 3524

1914 *Rehm*, Leafl. Philip. Bot. VI, 2220—Los Baños, on a *Canarium* (*Reyes*, comm. *Baker*, 1419); on *Canarium villosum* (*Merrill*, comm *Baker*, 1987—Drop number 870)

Phyllachora circinata Syd.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 421

1914 *Baker*, Leafl. Philip. Bot. VI, 2104—Under this reference change number 933 to 3522

* **Phyllachora circinata Syd.** var. **sanguinea Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2274—Los Baños, on *Ficus heterophylla* (*Baker*, 2606)

Phyllachora coicis Henn.

1895 *Hennings*, Hedw. 12—Tonkin, on *Coix agrestis*
1895 *Saccardo*, Syll. Fung. XI, 373
1901 *Raciborski*, Paras. Alg. und Pilze Javas I, 17

* **Phyllachora congruens Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2220—Los Baños, on *Panicum carinatum* (*Raimundo*, comm. *Baker*, 1725 and 1815); on a *Panicum* (*Copeland*, comm. *Baker*, 2061)

* **Phyllachora connari Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Malampaya Bay, Palawan, on a *Connarus* (*Merrill*, 8936)

Phyllachora cynodontis (Niessl) Sacc.

1876 *Niessl*, Notiz. Pyren. 54
1883 *Saccardo*, Syll. Fung. II, 602
1913 *Sydow*, Ann. Myc. XI, 328
1913 *Rehm*, Ann. Myc. XI, 395—*Rehm*, Ascom. exsicc. no. 377 b
1914 *Rehm*, Leafl. Philip. Bot. VI, 2221—Los Baños, on *Cynodon dactylon* (*Reyes*, comm. *Baker*, 1434)

Exsiccatus: *Sydow*, Fung. exot. no. 133

* **Phyllachora dalbergiicola Henn.** forma **leguminum Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2219—Los Baños, on pods of *Dalbergia ferruginea* (*Reyes*, comm. *Baker*, 1589)

*** Phyllachora donacina Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2222—Los Baños, on stems of *Donax cannaeforme* (*Reyes*, comm. *Baker*, 1271; *Raimundo*, comm. *Baker*, 1018)

*** Phyllachora elmeri Syd.**

1914 *Rehm*, Leafl. Philip. Bot. VI, C, 2219—Los Baños, on *Ficus ulmifolia* (*Raimundo*, comm. *Baker*, 1973)

Phyllachora fici-fulvae Koord.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 420

1914 *Rehm*, Leafl. Philip. Bot. VI, 2219—Los Baños, on *Ficus odoratus* (*Raimundo*, comm. *Baker*, 1659); on *Ficus ulmifolia* (*Reyes*, comm. *Baker*, 1837)

Phyllachora fici-minahassae Henn.

1908 *Hennings*, Philip. Journ. Bot. III, C, 45—Balut Isl., on *Ficus minahassae* (*Merrill*, 5422)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 420

Exsiccatus: *Sydow*, Fung. exot. no. 33

Phyllachora graminis (Pers.) Fckl.

1908 *Hennings*, Philip. Journ. Sci. III, C, 45—Manila, on *Andropogon sorghi* (*Merrill*, 5156)

1913 *Miyake*, Bot. Mag. Tokyo XXVII, 41—China, on a *Pennisetum*

1914 *Miyake*, Bot. Mag. Tokyo XXVIII, 40—China, on *Rottboellia compressa*

*** Phyllachora graminis (Pers.) Fckl.** forma **panici (Schw.) Shear**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2221—Los Baños, on *Panicum palmifolium* (*Reyes*, comm. *Baker*, 1714)

Phyllachora infectoria Cke.

1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Lake Manguao, Palawan, on a *Ficus* (*Merrill*, 8982)

Phyllachora kaernbachii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 45—Mindoro, on a *Ficus* (*Merrill*, 927); on *Ficus heterophylla* (*Merrill*, 3579 and 5625); Lanang, Samar, on a *Ficus* (*Merrill*, 5238)

Pyllachora luzonensis Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 46—Prov. Cavite, on *Milletia merrillii* (*Merrill*, 4173)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 414

1914 *Rehm*, Leafl. Philip. Bot. VI, 2220—Los Baños, on a *Milletia* (*Reyes*, comm *Baker*, 1369 and 1559)

1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Taytay, Palawan, on *Milletia* (*Merrill*, 8800, 8989, 9074 and S. 184); Lake Manguao, Palawan, on a *Milletia* (*Merrill*, 8973)

Phyllachora macarangae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 46—Balut Isl., on a *Macaranga* (*Merrill*, 5424)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 418

Phyllachora minuta Henn.

1902 *Hennings*, Hedw. 143—Java, on a *Hibiscus*

1905 *Saccardo*, Syll. Fung. XVII, 832

1911 *Rehm*, Ann. Myc. IX, 289—*Rehm*, Ascom. exsicc. no. 1946

* **Phyllachora ochnae Pat. et Har.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Taytay, Palawan, on an *Ochna* (*Merrill*, 8936)

*** Phyllachora orbicula Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2221—Los Baños, on *Bambusa blumeana* (*Reyes*, comm. *Baker*, 1603)

Phyllachora pahudiae Syd.

1913 *Rehm*, Ann. Myc. XI, 170—Los Baños, on *Pahudia rhomboidea* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2048
1914 *Rehm*, Leafl. Philip. Bot. VI, 2219—Los Baños, on *Pahudia rhomboidea* (*Baker*, 2055)

Phyllachora parkiae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 46—Lamao, Prov. Bataan and Montalban, Prov. Rizal, on *Parkia roxburghii* (*Copeland*, 27; *Merrill*, 5097)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 414

Phyllachora pongamiae (Berk. et Brm.) Petch

1908 *Hennings*, Hedw. XLVII, 250 (*Phyllachora pongamiae*)
1908 *Hennings*, Philip. Journ. Sci. III, C, 46—Davao, Mindanao, on *Pongamia glabra* (*Copeland*, 563)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 414
1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Malampaya Bay, Palawan, on *Pongamia mitis* (*Merrill*, 8938)

Exsiccatus: *Sydow*, **Fung. exot. no. 34**

Phyllachora pseudes Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2219—Los Baños, on *Ficus nota* (*Reyes*, comm. *Baker*, 1983)

Phyllachora pterocarpi Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2274—Los Baños, on *Pterocarpus indicus* (*Baker*, 2578 and 2159)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Mt. Capoas, Palawan, on *Pterocarpus indicus* (*Merrill*, 9084)

*** Phyllachora rehmiana Theiss. et Syd.**

1913 *Rehm*, Philip. Journ. Sci. VIII, C, 183 (*Phyllachora dioscoreae* non *Schw.*)
1914 *Theissen* et *Sydow*, Ann. Myc. XII, 184
1914 *Baker*, Leafl. Philip. Bot. VI, 2105 (*Phyllachora dioscoreae* non *Schw.*)

Phyllachora roureae Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 178

Phyllachora schoenicola Syd.

1913 *Sydow*, Ann. Myc. XI, 265—Mt. Banahao, on *Schoenus apogon* (*Copeland*, comm. *Baker*, 853)

Phyllachora shiraiana Syd.

1911 *Sydow* et *Butler*, Ann. Myc. IX, 393—Assam, on an *Arundinaria*

Phyllachora sorghi v. Hoehn.

1909 *v. Hoehnel*, Berl. Kais. Ak. Wiss. Wein CXVIII, 844
1914 *Rehm*, Leafl. Philip. Bot. VI, 2220—Los Baños, on *Sorghum vulgare* (*Reyes*, comm. *Baker*, 731); on a *Sorghum* (*Reyes*, comm. *Baker*, 1643)
1909 *Rehm*, Ann. Myc. VII, 403—*Rehm*, Ascom. exsicc. no. 1841
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 426

Phyllachora spinifera (Karst. et Har.) v. Hoehn.

1914 *Baker*, Leafl. Philip. Bot. VI, 2110—Under this reference change number 701 to 3520

*** Phyllachora sporoboli Pat.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 169—Malampaya Bay, Palawan, on a *Sporobolus* (*Merrill*, 8935)

Phyllachora stenospora (Berk. et Brm.) Sacc.

1870 *Berkeley* et *Broome*, Fung. Ceylon no. 1159 (*Dothidea*)
1883 *Saccardo*, Syll. Fung. II, 602

* **Phyllachora tjankorreh Rac.**

1908 *Raciborski*, Paras. Alg. und Pilze Javas III, 25
1914 *Sydow*, Philip. Journ. Sci. IX, C, 169—Taytay, Palawan, on *Dinochloa scandens* (*Merrill*, 8791 and 9073)

Phyllachora topographica Sacc.

1909 *Rehm*, Ann. Myc. VII, 403—*Rehm*, Ascom. exsicc. no. 1842

Phyllachora valsiformis Rehm

1913 *Rehm*, Ann. Myc. XI, 394—Los Baños, on *Ficus crassitora* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2072
1914 *Rehm*, Leafl. Philip. Bot. VI, 2275—Mt. Maquiling, on a *Ficus* (*Baker*, 2156)

Phyllachora yapensis (Henn.) Syd.

1908 *Hennings*, Hedw. XLVII, 255 (*Auerswaldia derridis*)
1913 *Rehm*, Philip. Journ. Sci. VIII, C, 391 (*Phyllachora lagunae*)—Los Baños, on *Derris elliptica* (*Baker*, 959)
1914 *Baker*, Leafl. Philip. Bot. VI, 2101 (*Auerswaldia derridis*); 2107 (*Phyllachora lagunae*); 2110 (*Phyllachora yapensis*)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 168—Taytay, Palawan, on a *Derris* (*Merrill*, 8813); Lake Manguao, Palawan, on a *Derris* (*Merrill*, 8968)

* **Phyllachora yapensis (Henn.) Syd.** var. **rhytismoides Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2218—Los Baños, on *Derris philippinensis* (*Raimundo*, comm. *Baker*, 1926)

* **Rhopographella reyesiana Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2224—Los Baños, on dead *Bambusa blumeana* (*Reyes*, comm. *Baker*, 1206)

* **Rhopographella reyesiana Rehm** var. **gigantochloae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2224—Los Baños, on *Gigantochloa scribneriana* (*Reyes*, comm. *Baker*, 1572)

Rhopographus blumeanus Rehm
1914 *Baker*, Leafl. Philip. Bot. VI, 2110—Under this reference change number 1131 to 3631

Roumegeria ichnanthi Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 47—Mt. Halcon, Mindoro, on *Ichnanthus pallens* (*Merrill*, 5533)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 437
1914 *Baker*, Leafl. Philip. Bot. VI, 2116—Wrongly placed in the *Sphaeriaceae* displaced under *Coryneliaceae*

* **Schizochora elmeri Syd.**
1913 *Sydow*, Ann. Myc. XI, 265—Dumaguete (Cuernos Mts.), Negros, on *Ficus guyeri* (*Elmer*, 9462)

Scirrhia bambusina Penz. et Sacc.
1897 *Penzig* et *Saccardo*, Malp. XI, 506
1899 *Saccardo* et *Sydow*, Syll. Fung. XIV, 679

* **Scirrhia gigantochloae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2223—Los Baños, on *Gigantochloa scribneriana* (*Reyes*, comm. *Baker*, 1519)

Scirrhia luzonensis Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 47—Los Baños,

on leaves of a *Bambusa* (*Merrill*, 5122)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 435

Scirrhia seriata Syd. et Butl.
1911 *Sydow* et *Butler*, Ann. Ann. Myc. IX, 402—Burma, on a *Bambusa*

*** Stigmatodothis palawanensis Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 174—Taytay Palawan, on living leaves of a *Dendrobium* (*Merrill*, 8909)

SPHAERIALES

SPHAERIACEAE

*** Acerbia donacina Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2264—Los Baños, on *Donax cannaeforme* (*Baker*, 2470^{b})

*** Apiospora camtospora Penz. et Sacc.**
1897 *Penzig* et *Saccardo*, Malp. XI, 398—Los Baños, on *Saccharum officinale* (*Reyes*, comm. *Baker*, 1740)

Apiospora curvispora (Speg.) Rehm var. rottboelliae Rehm
1914 *Rehm*, Leafl. Philip. Bot. VI, 2199—Los Baños, on dead culms of *Rottboellia exaltata* (*Reyes*, comm. *Baker*)

Apiospora luzonensis Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 48—Prov. Bataan, on dead stems of a bamboo (*Merrill*, 3533)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 161

*** Didymella acutata Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 164—Lake

Manguao, Palawan, on dead leaves of an *Orania* (*Merril*, 8953)

Didymella caricae Tassi
1900 *Tassi*, Bull. Lab. Bot. Siena III, tab. 13, fig. 3

*** Didymella lussoniensis Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 304—Los Baños, on dead *Dolichos uniflorus* (*Reyes*, comm. *Baker*, 1633)

*** Didymella pandanicola Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 164—Silanga, Palawan, on dead leaves of a *Pandanus* (*Merrill*, 8918)

Gibberidea nipae Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 47—Prov. Pampanga, on dead petioles of *Nipa fruticans* (*Merrill*, 4255)

*** Henningsomyces philippinensis Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 161—Taytay, Palawan, on a *Morinda* (*Merrill*, 8823)

*** Henningsomyces pusillimus Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 162—Taytay, Palawan, on an *Adina* (*Merrill*, 8882)

*** Herpotrichia philippinensis Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2203—Los Baños, on dead *Alstonia scholaris* (*Raimundo*, comm. *Baker*, 1705)

Julella luzonensis Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 49—Prov. Benguet, on bark (*Elmer*, 5937)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 258
1914 *Rehm*, Leafl. Philip. Bot. VI, 2204—Los Baños, on dead bark (*Reyes*, comm. *Baker*, 1835)

*** Massarinula cordiae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2199—Los Baños, on decorticated *Cordia myxa* (*Raimundo*, comm. *Baker*, 1414)

*** Melanomma philippinensis Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 167—Taytay, Palawan, on old logs (*Merrill*, 9076 type and 8756); Malampaya Bay, on dead logs (*Merrill*, 8940); Lake Manguao, on dead decorticated *Fagraea fragrans* (*Merrill*, 8955)

*** Melanopsamma nitens** var. **talaumae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2200—Los Baños, on leaves of *Talauma villariana* (*Baker*, 1683); on leaves of *Symphorema luzonica* (*Reyes*, comm. *Baker*, 1758)

Neopeckia rhodosticta (Berk. et **Brm.) Sacc.**

1877 *Berkeley* et *Broome*, Linn. Journ. Bot. XIV, 126 (*Sphaeria rhodosticta*)
1883 *Saccardo*, Syll. Fung. II, 317 (*Herpotrichia*)
1892 *Ellis* et *Everhart*, N. Am. Pyren. 158
1893 *Saccardo*, Syll. Fung. XI, 317
1894 *Starbaeck*, Vet. Ak. Hol. 30
1909 *v. Hoehnel*, Fragm. Myc. VII, 25
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 187
1913 *Saccardo*, Ann. Myc. XI, 554—Los Baños, on rotten limbs of *Gliricidia sepium* (*Baker*, 891)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2201—Pauai, Prov. Benguet, on bark (*Copeland*, comm. *Baker*, 1392); Los Baños, on dead *Gliricidia sepium* (*Baker*, 2168)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2264—(*Neopeckia*

diffusa)—Los Baños, on dead branches of *Gliricidia sepium* (*Baker*, 2175)

*** Ophiobolus graffianus Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 305—Manila, on dead fruits of *Coix lacrimi-jobi* (*Graff*, 20641 [a])

*** Ophiobolus licualae Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 165—Lake Manguao, Palawan, on *Licuala spinosa* (*Merrill*, 8946 type); Taytay, on the same host (*Merrill*, 8730)

Ophiobolus livistonae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 49—Davao, Mindanao, on dead petioles of a *Livistona* (*Copeland*, 524)

Ophiobolus nipae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 49—Prov. Pampanga, on dead petioles of *Nipa fruticans* (*Merrill*, 4257)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 312

*** Otthiella cyathoidea Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2259—Los Baños, on dead fallen limbs (*Sablan*, comm. *Baker*, 2564)

Rosellinia cocoes Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 48—Davao, Mindanao, on dead peduncles of *Cocos nucifera* (*Copeland*, 456)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 110

1914 *Sydow*, Philip. Journ. Sci. IX, C, 166—Taytay, Palawan, on fallen petioles of an *Orania* (*Merrill*, 8966)

Exsiccatus: *Sydow*, **Fung. exot. no. 183**

Rosellinia emergens (Berk. et Brm.) Sacc.

1870 *Berkeley* et *Broome*, Fung. Ceylon no. 1089 (*Sphaeria*)
1882 *Saccardo*, Syll. Fung. I, 257
1914 *Rehm*, Leafl. Philip. Bot. VI, 2198—Los Baños, on fallen limbs (*Reyes*, comm. *Baker*, 1730)

Rosellinia lamprostoma Syd.

1914 *Rehm*, Leafl. Philip. Bot. VI, 2261—Los Baños, on dead branches of *Claoxylon elongatum* (*Baker*, 1796); Mt. Maquiling, on a dead *Daemonorops* (*Baker*, 2720)

* **Rosellinia perusensis Henn.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 166—Taytay, Palawan, on decorticated logs (*Merrill*, 8768)

Rosellinia procera Syd.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 104
1913 *Rehm*, Philip. Journ. Sci. VIII, C, 25 (*Rosellinia emergens* non *Berk.* et *Brm.*)—Los Baños, on dead trunks (*Raimundo*, comm. *Baker*, 502)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2198—Questionably a synonym of *Rosellinia emergens Berk.* et *Brm.*
1914 *Rehm*, Leafl. Philip. Bot. VI, 2261—Los Baños, on dead limbs of *Claoxylon elongatum* (*Baker*, 2477); on dead limbs of *Columbia serratifolia* (*Baker*, 2476)

* **Rosellinia rachidis Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2198—Los Baños, on living rachis of *Gigantochloa scribneriana* (*Reyes*, comm. *Baker*, 1964)

* **Rosellinia truncata Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 166—Taytay, Palawan, on dead fallen branches (*Merrill*, 8782)

*** Rosellinia umbilicata Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 304—Prov. Nueva Viscaya, on dead bark (*McGregor*, 20270)

Trematosphaeria palaquii Rick.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 246

*** Trichosphaeria bambusicola Rehm**

1914 *Rehm*, Ann. Myc. XII, 173—Los Baños, on leaves of *Bambusa blumeana* (*Reyes*, comm. *Baker*)—*Rehm*, Ascom. exsicc. no. 2115. Probably err. cit. for *Trichonectria bambusicola*, q. v.

Venturia litseae Syd.

1913 *Sydow*, Ann. Myc. XI, 404—Los Baños, on *Litsea glutinosa* (*Reyes*, comm. *Baker*, 1520)

CERATOSTOMACEAE

*** Lentomita philippinensis Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2258—Los Baños, on limbs of *Gliricidia sepium* (*Baker*, 2185)

CUCURBITARIACEAE

Loranthomyces sordidulus (Lev.) v. Hoehn.

1914 *Theissen*, Ann. Myc. XII, 66

1914 *Sydow*, Philip. Journ. Sci. IX, C, 167—Taytay, Palawan, on *Loranthus* (*Merrill*, 8990)

Exsiccatus: *Sydow*, Fung. exot. no. 131

CORYNELIACEAE

This family was misplaced by the printer on page 2116 of the preliminary list. Should follow the *Sphaeriaceae* after *Zignoella* lower on the page. *Roumegeria* goes to the *Dothideaceae*, *Sphaeria* to *Zignoella* inclusive to the *Sphaeriaceae*

Corynelia clavata (Linn.) Sacc.

1815-18 *Fries*, Obs. Myc. II, 343
1891 *Saccardo*, Syll. Fung. IX, 1073
1905 *Starbaeck*, Arkiv. für Bot. V, 18
1914 *Baker*, Leafl. Philip. Bot. VI, 2116—Under this reference change number 851 to 3521

Exsiccatus: *Sydow*, Fung. exot. no. 185

AMPHISPHAERIACEAE

*** Amphisphaeria bambusae Trav.**

1905 *Traverso*, Malp. 136
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 185
1914 *Rehm*, Leafl. Philip. Bot. VI, 2261—Los Baños, on *Bambusa vulgaris* (*Reyes*, comm. *Baker*, 1913)

*** Amphisphaeria clerodendri Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2200—Los Baños, on *Clerodendron thompsonae* (*Baker*, 1955 [a])

*** Amphisphaeria notabilis Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2262—Los Baños, on dead branches (*Teodoro*, comm. *Baker*, 2552)

*** Amphisphaeria palawanensis Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 166—Taytay, Palawan, on a dead *Uncaria* (*Merrill*, 8843)

*** Amphisphaeria schizostachyi Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2262—Los Baños, on dead stems of a *Schizostachyum* (*Reyes*, comm. *Baker*, 1882)

CLYPEOSPHAERIACEAE

* **Anthostomella atronitens Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2196—Los Baños, on dead stems of *Donax cannaeforme* (*Baker*, 1017)

* **Anthostomella bicincta Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 165—Taytay, Palawan, on dead petioles of a *Caryota* (*Merrill*, 8879)

Anthostomella calocarpa Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 182

* **Anthostomella cocoina Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 166—Taytay, Palawan, on dead petioles and rachises of *Cocos nucifera* (*Merrill*, 8892 and 9077)

* **Anthostomella copelandii Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2197—Pauai, Prov. Benguet, on dead bark (*Copeland*, comm. *Baker*, 1289)

* **Anthostomella donacis Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2259—Los Baños, on dead stems of *Donax cannaeforme* (*Raimundo*, comm. *Baker*, 1654; *Baker*, 1956)

Anthostomella grandispora Penz. et Sacc. var. schizostachyi Rehm
1914 *Rehm*, Leafl. Philip. Bot. VI, 2260—Los Baños, on a dead *Schizostachyum* (*Reyes*, comm. *Baker*, 1968 b)

*** Anthostomella lichenoides Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2197—Los Baños, on dead limbs lying on the ground (*Reyes*, comm. *Baker*, 1737)

*** Anthostomella micraspis (Berk.) Sacc. et Trav.**
1842 *Berkeley*, Journ. Bot. 156 (*Sphaeria*)
Saccardo et *Traverso*, Syll. Fung. XXII, 108
1914 *Rehm*, Leafl. Philip. Bot. VI, 2197—Los Baños, on dead *Alchornea rugosa* (*Baker*, 2001)

Anthostomella mindorensis Rehm
1914 *Rehm*, Leafl. Philip. Bot. VI, 2196—Los Baños, on dead petioles of *Arenga mindorensis* (*Baker*, 1668, 706 and 1120)

*** Anthostomella mindorensis Rehm** var. **verruculosa Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2196—Los Baños, on dead petioles of *Arenga mindorensis* (*Reyes*, comm. *Baker*, 1261 and 1564)

Anthostomella mirabilis (Berk. et Brm.) v. Hoehn.
1909 *v. Hoehnel*, Fragm. Myc. VI (*Astrocystis*)
1911 *Sydow* et *Butler*, Ann. Myc. IX, 411 (*Astrocystis*)
1914 *Baker*, Leafl. Philip. Bot. VI, 2120—References herein to *Anthostomella bambusae* and those bearing numbers 475 and 890 go to *Anthostomella mirabilis* var. *bambusae*)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2196—Mt. Banahao, on *Gigantochloa scribneriana* (*Baker*, 2243)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2260—Los Baños, on *Bambusa vulgaris* (*Reyes*, comm. *Baker* 2260)

Anthostomella mirabilis (Berk. et Brm.) v. Hoehn. var. **bambusae (Henn.) Rehm**
1908 *Hennings*, Hedw. XLVII, 256 (*Rosellinia bambusae*) —Pampanga, on a dead *Bambusa* (*Merrill*, 5030)

1908 *Hennings*, Philip. Journ. Sci. III, C, 48 (*Rosellinia bambusae*)—Mt. Arayat, Prov. Pampanga, on dead bamboo (*Merrill*, 5030)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 110 (*Rosellinia bambusae*)

1913 *Sydow*, Philip. Journ. Sci. VIII, C, 273 (*Rosellinia bambusae*)—Mt. Mariveles, on dead *Schizostachyum* (*Graff*, comm. *Merrill*, S. 125)

1913 *Rehm*, Philip. Journ. Sci. VIII, C, 258 (*Anthostomella mirabilis*)—Los Baños, on dead *Bambusa blumeana* (*Baker*, 475)

1913 *Rehm*, Philip. Journ. Sci. VIII, C, 401 (*Anthostomella mirabilis*)—Los Baños, on dead *Bambusa blumeana* (*Baker*, 890)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2196—Los Baños, on dead *Schizostachyum* (*Reyes*, comm. *Baker*, 1457, 425 and 890; *Baker*, 1670, 1828 and 1263)

*** Anthostomella mirabilis (Berk. et Brm.) v. Hoehn.** var. **obtecta Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2261—Los Baños, on dead *Bambusa vulgaris* (*Reyes*, comm. *Baker*, 1888)

*** Anthostomella mirabilis (Berk. et Brm.) v. Hoehn.** var. **schizostachyi Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2260—Los Baños, on a *Bambusa* (*Reyes*, comm. *Baker*, 2575); on a *Schizostachyum* (*Reyes*, comm. *Baker*, 3223—This number was wrongly cited as 1877)

*** Anthostomella sacchariferae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2260—Los Baños, on dead petioles of *Arenga saccharifera* (*Reyes*, comm. *Baker*, 1797)

*** Clypeosphaeria gigantochloae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2204—Los Baños, on dead *Gigantochloa scribneriana* (*Baker*, 1021 a)

MYCOSPHAERELLACEAE

*** Guignardia albicans Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2258—Los Baños, on *Hoya luzonensis* (*Baker*, 2500 [a])

*** Guignardia arengae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2195—Los Baños, on dead leaves of *Arenga mindorensis* (*Baker*, 2170)

Guignardia creberrima Syd.
1914 *Rehm*, Leafl. Philip. Bot. VI, 2194—Los Baños, on *Capparis horrida* (*Raimundo*, comm. *Baker*, 1729)

*** Guignardia fusco-coriacea Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2195—Los Baños, on *Antidesma bunius* (*Reyes*, comm. *Baker*, 1841)

*** Guignardia manihoti Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 304—Los Baños, on dead *Manihot utilissima* (*Raimundo*, comm. *Baker*, 1615)

*** Guignardia sterculiae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2194—Los Baños, on *Sterculia foetida* (*Reyes*, comm. *Baker*, 1814)

Mycosphaerella alocasiae Syd.
1913 *Rehm*, Ann. Myc. XI, 393—Mt. Maquiling, on *Alocasia indica* (*Merrill*)—*Rehm*, Ascom. exsicc. no. 2060

Exsiccatus: *Sydow*, Fung. exot. no. 30

* **Mycosphaerella brideliae Syd.**
1913 *Sydow*, Ann. Myc. XII, 200—Los Baños, on *Bridelia stipularis* (*Baker*, 2577)

Mycosphaerella caricae Syd.
1913 *Sydow*, Ann. Myc. XI, 403—Los Baños, on *Carica papaya* (*Reyes*, comm. *Baker*, 1512)

Mycosphaerella creberrima Penz. et Sacc.
1897 *Penzig* et *Saccardo*, Malp. XI, 397—Java
1899 *Saccardo* et *Sydow*, Syll. Fung. XIV, 532

Mycosphaerella oculata Syd.
1914 *Sydow*, Ann. Myc. XI, 403—Los Baños, on *Premna odorata* (*Reyes*, comm. *Baker*, 1511)

Mycosphaerella pericampyli Syd.
1913 *Rehm*, Ann. Myc. XI, 393—Los Baños, on *Pericampylus incanus* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2061

* **Mycosphaerella ptychospermatis Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2199—Los Baños, on *Ptychosperma macarthurii* (*Baker*, 1440^{b})

* **Mycosphaerella reyesii Syd.**
1914 *Sydow*, Ann. Myc. XII, 200—Los Baños, on dying leaves of *Sapindus saponaria* (*Reyes*, comm. *Baker*, 2141)

Mycosphaerella roureae Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 128

Sphaerulina smilacincola Rehm
1913 *Rehm*, Ann. Myc. XI, 169—*Rehm*, Ascom. exsicc. no. 2043

PLEOSPORACEAE

* **Didymosphaeria minutella Penz. et Sacc.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 165—Taytay, Palawan, on dead *Dinochloa scandens* (*Merrill*, 8755); Silanga, Palawan, on dead *Schizostachyum* (*Merrill*, 8933)

Didymosphaeria striatula Penz. et Sacc.
1904 *Penzig* et *Saccardo*, Icon. Fung. Java 10
1905 *Saccardo*, Syll. Fung. XVII, 680
1914 *Rehm*, Ann. Myc. XII, 171—Antipolo, Luzon, on a *Bambusa* (*Ramos*)—*Rehm*, Ascom. exsicc. no. 2107

Exsiccatus: *Sydow*, Fung. exot. no. 176

* **Leptosphaeria dryadea Sacc.** subsp. **lusoniensis Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 304—Los Baños, on dead leaves of *Kigelia pinnata* (*Raimundo*, comm. *Baker*, 2050)

* **Leptosphaeria simillima Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2203—Los Baños, on dead twigs of *Capparis horrida* (*Raimundo*, comm. *Baker*, 1565^{b})

Merrilliopeltis calami Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 54—Mt. Halcon, Mindoro, on stems of a *Calamus* (*Merrill*, 6113)
1911 *v. Hoehnel*, Ann. Myc. IX, 173
1813 *Saccardo* et *Trotter*, Syll. Fung. XXII, 565
1914 *Rehm*, Leafl. Philip. Bot. VI, 2271—Mt. Maquiling, on dead stems of a *Calamus* (*Baker*, 2739)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 165—Lake Manguao, Palawan, on a dead *Calamus* (*Merrill*, 8951)

Merrilliopeltis hoehnelii Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2232—Los Baños, on *Arenga saccharifera* (*Reyes*, comm. *Baker*, 1566 and 1690); on *Arenga mindorensis* (*Reyes*, comm. *Baker*, 1566^{a} and 1953)

1914 *Rehm*, Ann. Myc. XII, 173—Los Baños, on dead petioles of *Arenga acchariferas* (*Reyes*, comm. *Baker*)—*Rehm*, Ascom. exsicc. no. 2117

* **Merrilliopeltis parvula Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 164—Lake Manguao, Palawan, on dead petioles of an *Orania* (*Merrill*, 8961 type, 8960 and 8956)

* **Metasphaeria abundans Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2201—Los Baños, on dead *Alangium begoniaefolium* (*Raimundo*, comm. *Baker*, 1742)

* **Metasphaeria consociata Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2201—Los Baños, on dead stems (*Reyes*, comm. *Baker*, 1254)

* **asphaeria gigantochloae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2203—Los Baños, on dead rachis of *Gigantochloa scribneriana* (*Reyes*, comm. *Baker*, 1963)

Metasphaeria maculans Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2202—Los Baños, on dead petioles of *Arenga saccharifera* (*Reyes*, comm. *Baker*, 1963; *Baker*, 1771)

* **Metasphaeria pseudostromatica Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2262—Mt. Banahao, on a dead *Astronia* (*Baker*, 2238)

* **Metasphaeria reyesii Sacc.**

1914 *Saccardo*, Ann. Myc. xii, 305—Los Baños, on dead stems of *Synedrella nodiflora* (*Reyes*, comm. *Baker*, 1430)

* **Metasphaeria schizostachyi Rehm** forma **congregata Rehm**

1914 *Rehm*, Leafl. Philip. Bot. vi, 2263—Los Baños, on a *Schizostachyum* (*Reyes*, comm. *Baker*, 1968 [a])

Physalospora hoyae Syd.

1913 *Sydow*, Ann. Myc. xi, 259—Los Baños, on dead leaves of *Hoya luzonensis* (*Baker*, 836 pt.)—Apparently not *Physalospora hoyae v. Hoehn.*

1913 *Saccardo* et *Trotter*, Syll. Fung. xxii, 83

Physalospora ramosii Henn.

1908 *Hennings*, Philip. Journ. Sci. iii, C, 48—Prov. Rizal, on a *Derris* (*Ramos*, 1396 [a])

1913 *Saccardo* et *Trotter*, Syll. Fung. xxii, 81

Exsiccatus: *Sydow*, Fung. exot. no. 81

Pleosphaerulina phaseoli Syd.

1913 *Rehm*, Ann. Myc. xi, 393—Manila, on *Phaseolus semierectus* (*Graff*)—*Rehm*, Ascom. exsicc. no. 2064

MASSARIACEAE

* **Massarina nigroviridula Rehm**

1914 *Rehm*, Leafl. Philip. Bot. vi, 2263—Los Baños, on dead branches of *Derris elliptica* (*Baker*, 2182)

* **Massarina raimundoi Rehm**

1914 *Rehm*, Leafl. Philip. Bot. vi, 2263—Los Baños, on *Citrus nobilis* (*Raimundo*, comm. *Baker*, 1868)

GNOMONIACEAE

Ceratosphaeria philippinarum Rehm
1914 *Baker*, Leafl. Philip. Bot. VI, 2122—Under this reference change number 15 [b] to 3

*** Gnomonia litseae Syd.**
1914 *Sydow*, Ann. Myc. XII, 200—Los Baños, on *Litsea glutinosa* (*Reyes*, comm. *Baker*, 1812)
1914 *Baker*, Leafl. Philip. Bot. VI, 2113—Wrongly placed in the *Sphaeriaceae*

VALSACEAE

*** Allescherina strebli Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2264—Los Baños, on dead *Streblus asper* (*Raimundo*, comm. *Baker*, 1857 [a])

*** Anthostoma flagellariae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2216—Los Baños, on dead stems of *Flagellaria indica* (*Reyes*, comm. *Baker*, 1576 [b])

*** Calosphaeria inconspicua Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2213—Los Baños, on *Gigantochloa scribneriana* (*Raimundo*, comm. *Baker*, 1698)

Cryptosphaeria philippinensis Rehm
1914 *Baker*, Leafl. Philip. Bot. VI, 2123—Under this reference change number 478 [a] to 561 [b])

*** Cryptovalsa philippinensis Sacc.**
1913 *Saccardo*, Ann. Myc. XI, 554—Subprov. Bontoc, on stems of *Rottboellia exaltata* (*Van Overbergh*, 2521)

*** Diaporthe citrincola Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2269—Los Baños, on dead *Citrus nobilis* (*Raimundo*, comm. *Baker*, 1875)

*** Endoxyla mangiferae Henn.**

1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Davao, Mindanao, on dead wood of *Mangifera indica* (*Copeland*, 825)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 365

*** Eutypa alangii Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2214—Los Baños, on dead limbs of *Alangium begoniaefolium* (*Raimundo*, comm. *Baker*, 1756)

Eutypa bambusina Penz. et Sacc.

1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Prov. Bataan and Prov. Rizal, on dead bamboo (*Copeland*, 150); Culion (*Merrill*, 3606)
1913 *Rehm*, Ann. Myc. XI, 394 (*Eutypella*)—Los Baños, on *Bambusa blumeana* (*Baker*)—*Rehm*, Ascom. exsicc. no. 2067
1914 *Sydow*, Philip. Journ. Sci. XI, C, 162—Taytay, Palawan, on dead *Dinochloa scandens* (*Merrill*, 8734); on *Schizostachyum* (*Merrill*, 8762, 8770 and S. 187)

*** Eutypa capparidis Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2215—Los Baños, on dead limbs of a *Capparis* (*Raimundo*, comm. *Baker*, 1515)

Eutypa corniculata (Ehrh.) Rehm

1900 *Berlese*, Icon. Fung. III, 80

Eutypa flavovirens (Hoffm.) Tul.
Tulasne, Sel. Fung. Carp. II, 57
1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Montalban, Prov. Rizal, on fallen limbs (*Merrill*, 5098)

* **Eutypa inconspicua Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2265—Los Baños, on dead limbs of *Streblus asper* (*Raimundo*, comm. *Baker*, 1858 [b])

* **Eutypa lata (Pers.) Tul.**
Persoon, Syn. Fung. 29 (*Sphaeria*)
Tulasne, Sel. Fung. Carp. II, 56
1914 *Rehm*, Leafl. Philip. Bot. VI, 2214—Los Baños, on dead fallen branches (*Reyes*, comm. *Baker*, 1824 [b])

Eutypa ludibunda Sacc.
1900 *Berlese*, Icon. Fung. III, 50
1914 *Saccardo*, Ann. Myc. XII, 305—Bontoc, Prov. Lepanto, on a dead *Vitis* (*Van Overbergh*, 2879)

* **Eutypa megalosoma Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2264—Los Baños, on dead fallen limbs (*Sablan*, comm. *Baker*, 2566); Mt. Maquiling, on dead fallen limbs (*Raimundo*, comm. *Baker*, 1135)

* **Eutypa stenospora (Cke.) Sacc.** forma **hibisci Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2215—Los Baños, on *Hibiscus rosa-sinensis* (*Baker*, 1424 [a]; *Raimundo*, comm. *Baker*, 2005)

Eutypella citricola Speg.
1909 *Sydow*, Hedw. 80 (*Eutypa citricola*)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2265—Los Baños, on dead branches of *Citrus nobilis* (*Raimundo*, comm. *Baker*, 1869 and 1877)

Eutypella cocos Ferd. et Winge

1908 *Ferd.* et *Winge*, Vedensk. Medd. Naturh. Foren. Kiobenhavn, 141

1911 *Sydow*, Ann. Myc. IX, 145 (*Peroneutypella cocoes*)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 358

1914 *Rehm*, Leafl. Philip. Bot. VI, 2214—Los Baños, on husks of *Cocos nucifera* (*Baker*, 1704)

1914 *Sydow*, Philip. Journ. Sci. IX, C, 163 (*Peroneutypella cocoes*)—Taytay, Palawan, on dead husks of *Cocos nucifera* (*Merrill*, 8747)

Eutypella gliricidiae Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2266—Los Baños, on dead *Gliricidia sepium* (*Baker*, 2169 and 2183)

* **Eutypella leucaenae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2267—Los Baños, on dead *Leucaena glauca* (*Baker*, 2111)

* **Eutypella premnae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2213—Los Baños, on dead *Premna vestita* (*Baker*, 1944; *Reyes*, comm. *Baker*, 1945)

* **Eutypella radulans (Berk. et Curt.) Berl.**

Berkeley et *Cooke*, Ex. Fung. Schw. 287

1900 *Berlese*, Icon. Fung. III, 74

1914 *Rehm*, Leafl. Philip. Bot. VI, 2214—Los Baños, on dead fallen branches (*Reyes*, comm. *Baker*, 1824)

* **Eutypella rehmiana (Henn. et Nym) v. Hoehn.**

1899 *Hennings* et *Nym*, Warb. Mons. I, 66 (*Pseudotrype*)—Java, on a *Calamus*

1914 *Rehm,* Leafl. Philip. Bot. VI, 2277 (*Pseudotrype*)—Mt. Maquiling, on dead limbs (*Baker,* 2371)
1914 *Sydow,* Philip. Journ. Sci. IX, C, 163—Taytay, Palawan, on a dead *Calamus* (*Merrill,* 8757); on dead *Pandanus merrillii* (*Merrill,* 8876); on a dead *Areca* (*Merrill,* 8898)

* **Eutypella russodes (Berk. et Brm.) Syd.**
1914 *Sydow,* Philip. Journ. Sci. IX, C, 162 (Doubtfully this species)—Taytay, Palawan, on dead *Desmodium umbellatum* (*Merrill,* 8871)

* **Holstiella eutypa Rehm**
1914 *Rehm,* Leafl. Philip. Bot. VI, 2217—Los Baños, on fallen limbs (*Reyes,* comm. *Baker,* 1833)

* **Kalmusia philippinarum Rehm**
1914 *Rehm,* Leafl. Philip. Bot. VI, 2218—Los Baños, on rotten limbs (*Reyes,* comm. *Baker,* 1831 and 1833)

* **Peroneutypa discriminis Rehm**
1914 *Rehm,* Leafl. Philip. Bot. VI, 2267—Los Baños, on dead *Macaranga tanarius* (*Baker,* 1851); on dead *Streblus asper* (*Raimumdo,* comm. *Baker,* 1857 ^{b})

* **Peroneutypa philippinarum Rehm**
1914 *Rehm,* Leafl. Philip. Bot. VI, 2268—Los Baños on dead branches of *Streblus asper* (*Baker,* 1855, 1861 and 1864)

* **Peroneutypa philippinarum Rehm** var. **gliricidiae Rehm**
1914 *Rehm,* Leafl. Philip. Bot. VI, 2268—Los Baños, on dead *Gliricidia sepium* (*Baker,* 2173)

* **Peroneutypella adelphica Rehm**
1914 *Rehm,* Leafl. Philip. Bot. VI, 2268—Los Baños, on

dead branches of *Streblus asper* (*Baker*, 1862 and 1863)

* **Peroneutypella arecae Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 163—Taytay, Palawan, on dead *Areca catechu* (*Merrill*, 8859)

* **Peroneutypella cyphelioides Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2269—Los Baños, on dead branches of *Streblus asper* (*Raimundo*, comm. *Baker*, 1866)

* **Peroneutypella cyphelioides Rehm** forma **lignicola Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2269—Los Baños, on dead branches of *Streblus asper* (*Raimundo*, comm. *Baker*, 1865)

* **Peroneutypella graphidioides Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 163—Taytay, Palawan, on dead *Terminalia catappa* (*Merrill*, 8724)

Valsella pinangae Syd.
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 359

DIATRYPACEAE

* **Diatrype albizziae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2267—Los Baños, on dead *Albizzia acle* (*Baker*, 2130)

***Diatrype clerodendri Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2215—Los Baños, on dead *Clerodendron thompsoni* (*Baker*, 1955 [b])

Diatrype mindanaensis Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Prov. Zamboanga, on dead limbs (*Copeland*, 744)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 368

*** Diatrype polygoneia Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2266—Los Baños, on dead *Gliricidia sepium* (*Baker*, 2172 [a])

*** Diatrype polygoneia Rehm** var. **strebli Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2266—Los Baños, on dead *Streblus asper* (*Raimundo*, comm. *Baker*, 1838 [a]); on dead *Antidesma bunius* (*Raimundo*, comm. *Baker*, 1892 and 1893)

MELANCONIDACEAE

*** Valsaria citri Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2270—Los Baños, on dead *Citrus nobilis* (*Raimundo*, comm. *Baker*, 1878)

*** Valsaria colludens Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2217—Los Baños, on dead *Gigantochloa scribneriana* (*Baker*, 1735 [a])

*** Valsaria discoidea Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2216—Los Baños, on fallen limbs (*Reyes*, comm. *Baker*, 3513—Number wrongly cited as 1773)

*** Valsaria insitiva (de Not.) Ces. et de Not.**

de Notaris, Microm. It. Dec. VII, 1 (*Sphaeria*)
Cesati et *de Notaris*, Schem. Sphaer. It. 205
1882 *Saccardo*, Syll. Fung. I, 745 (*Valsaria aethiops C.* et *E.*)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2216—Los Baños, on dead *Morus alba* (*Raimundo*, comm. *Baker*, 1617)

*** Valsaria strebli Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2270—Los Baños, on dead branches of *Streblus asper* (*Raimundo*, comm. *Baker*, 1859)

MELOGRAMMATACEAE

Botryosphaeria bakeri Rehm

1914 *Baker*, Leafl. Philip. Bot. VI, 2126—Under this reference change number 696 to 3519

1914 *Rehm*, Leafl. Philip. Bot. VI, 2195—Los Baños, on dead branches (*Baker*, 1563)

XYLARIACEAE

Daldinia asphaltum (Lk. et Fr.) Sacc.

1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Lamao, Prov. Bataan, on dead wood (*Copeland*, 156)

Daldinia concentrica (Bolt.) Ces. et de Not.

1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Pauai, Prov. Benguet, on dead limbs of a *Quercus* (*Merrill*, 4999; *Copeland*, 36)

Daldinia eschscholzii (Ehrenb.) Rehm

1820 *Ehrenberg*, Fung. Chamis. 59 (*Sphaeria*)

1904 *Rehm*, Ann. Myc. 173

1907 *Rehm*, Ann. Myc. V, 211—*Rehm*, Ascom. exsicc. no. 1718

1914 *Rehm*, Leafl. Philip. Bot. VI, 2206—Los Baños, on bark of *Tamarindus indicus* (*Evaristo*, comm. *Baker*, 1568 and 1561)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2273—Mt. Maquiling, on dead wood (*Baker*, 2723)

*** Hypoxylon atropurpureum Fr.**

1849 *Fries*, Summ. Veg. Scand. 324

1914 *Rehm*, Leafl. Philip. Bot. VI, 2271—Pangasinan, Prov. Laguna, on a dead *Citrus* (*Sablan*, comm. *Baker*, 2569)

Hypoxylon annulatum (Schw.) Mont.

1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Lamao, Prov. Bataan, on bark of a *Dipterocarpus* (*Copeland*, 161)
1908 *Theissen*, Ann. Myc. VI, 536
1909 *Theissen*, Ann. Myc. VII, 155
1914 *Rehm*, Leafl. Philip. Bot. VI, 2205—Los Baños, on a dead trunk (*Baker*, 2007)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2271—Mt. Maquiling, on fallen branches (*Reyes*, comm. *Baker*, 2540)

Hypoxylon apoense Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Mt. Apo, Mindanao, on dead trunks (*Copeland*, 1073)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 316

*** Hypoxylon culmorum Cke.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 167—Taytay, Palawan, on dead *Dinochloa scandens* (*Merrill*, 8841); on a dead *Schizostachyum* (*Merrill*, 8912); Lake Manguao, on a dead *Schizostachyum* (*Merrill*, 8964)

*** Hypoxylon culmorum Cke.** var. **bambusae-blumeanae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2205—Los Baños, on dead *Bambusa blumeana* (*Reyes*, comm. *Baker*, 114; *Baker*, 1624)

*** Hypoxylon effusum Nits.**

1867-70 *Nitschke*, Pyren. Germ. 48
1882 *Saccardo*, Syll. Fung. I, 379
1908 *Theissen*, Ann. Myc. VI, 538
1909 *Theissen*, Ann. Myc. VII, 156
1913 *Saccardo*, Ann. Myc. XI, 554—Limay, Prov. Ba-

taan, on rotten wood (*Graff*, 19068)
1914 *Rehm*, Leafl. Philip. Bot. VI, 2271—Mt. Maquiling, on dead fallen branches (*Baker*, 2731)

Hypoxylon haematostroma Mont.
1842 *Montagne*, Ramon Hist. Fis. Pol. Nat. Cuba 344—Not Syll. Crypt. Cuba

Hypoxylon hibisci Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Manila, on dead branches of *Hibiscus rosa-sinensis* (*Merrill*, 4115)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 317

Hypoxylon marginatum (Schw.) Berk.
1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Culion, on fallen limbs (*Merrill*, 3604); Mt. Arayat, Prov. Pampanga (*Merrill*, 3700); Mt. Mariveles, Prov. Bataan, on rotten branches (*Merrill*, 5029); Davao, Mindanao, on rotten limbs (*Copeland*, 384)
1908 *Theissen*, Ann. Myc. VI, 538
1909 *Theissen*, Ann. Myc. VII, 155
1914 *Rehm*, Leafl. Philip. Bot. VI, 2271—Mt. Maquiling, on dead fallen branches (*Baker*, 2725 ᵇ)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 167—Taytay, Palawan, on fallen branches (*Merrill*, 8765 and 8767); Lake Manguao, on fallen branches (*Merrill*, 8965)

Hypoxylon minutellum Syd.
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 322

Hypoxylon cfr. **multiforme Fr.**
1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Mt. Mariveles, Prov. Bataan, on dried branches (*Copeland*, 154)

Hypoxylon nucigenum Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Lamao,

Prov. Bataan, on dead trunks (*Copeland*, 155); Palawan, on dead trunks (*Merrill*, 3583)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 315

*** Hypoxylon nummularioides Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2272—Los Baños, on a dead *Schizostachyum* (*Baker*, 2407 b)

*** Hypoxylon purpureum Nits.**
1367-70 *Nitschke*, Pyren. Germ. 37
1914 *Rehm*, Leafl. Philip. Bot. VI, 2272—Los Baños, on dead *Macaranga tanarius* (*Raimundo*, comm. *Baker*, 1850)

Hypoxylon rubiginosum (Pers.) Fr.
1909 *Theissen*, Ann. Myc. VII, 147

Hypoxylon serpens (Pers.) Fr.
1849 *Fries*, Summ. Veg. Scand. 387
1908 *Hennings*, Philip. Journ. Sci. III, C, 51—Prov. Zamboanga, on rotten branches (*Copeland*, 746)
1909 *Theissen*, Ann. Myc. VII, 153

Hypoxylon stygium (Lev.) Sacc.
1846 *Leveille*, Ann. Sci. Nat. V, 258 (*Sphaeria*)
1882 *Saccardo*, Syll. Fung. I, 380—Guadeloupe

*** Hypoxylon subeffusum Speg.**
1883 *Spegazzini*, Fung. Guar. I, no. 103
1914 *Rehm*, Leafl. Philip. Bot. VI, 2271—Los Baños, on dead trunks (*Sablan*, comm. *Baker*, 2567)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 167—Lake Manguao, Palawan, on logs (*Merrill*, 8978)

*** Kretzschmaria clavus Fr.**
1908 *Theissen*, Ann. Myc. VI, 535

1914 *Rehm*, Leafl. Philip. Bot. VI, 2206—Los Baños, on decorticated wood (*Baker*, 1621); on rotten bark (*Raimundo*, comm. *Baker*, 1666)

*** Kretzschmaria coenopus (Fr.) Cke.** var. **spinifera (Rehm) Ell. et MacB.**

1896 *Ellis* et *MacBride*, Bull. Lab. Nat. Hist. Univ. Iowa IV, 71

1899 *Saccardo* et *Sydow*, Syll. Fung. XIV, 512

1914 *Rehm*, Leafl. Philip. Bot. VI, 2206—Los Baños, on a rotten trunk (*Baker*, 2112)

Kretzschmaria gomphoidea Penz. et **Sacc.**

1897 *Penzig* et *Saccardo*, Malp. XI, 493—Java

1899 *Saccardo* et *Sydow*, Syll. Fung. XIV, 512

*** Kretzschmaria gomphoidea Penz.** et **Sacc.** var. **microspora Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2206—Los Baños, on a decorticated trunk (*Baker*, 1772)

Kretzschmaria microspora Henn.

Hennings, Fung. Amaz. II, 261

1908 *Hennings*, Philip. Journ. Sci. III, C, 42—Davao, Mindanao, on dead trunks (*Copeland*, 496)

Nummularia anthracina (Kze. et **Schum.) Trav.**

1861-65 *Tulasne*, Sel. Fung. Carp. II, 43

1908 *Rehm*, Ann. Myc. VI, 121—*Rehm*, Ascom. exsicc. no. 1769

1914 *Rehm*, Leafl. Philip. Bot. VI, 2208—Pauai, Prov. Benguet, on dead bark (*Copeland*, comm. *Baker*, 1287); Los Baños, on dead *Gliricidia sepium* (*Baker*, 2186)

Nummularia anthracodes (Fr.) Cke.

1909 *Theissen*, Ann. Myc. VII, 12

1913 *Saccardo*, Ann. Myc. XI, 551—Prov. Bataan, on decorticated wood (*Graff*, 19054)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2208—Pauai, Prov. Benguet, on dead bark (*Copeland*, comm. *Baker*, 1294); Los Baños, on dead *Antidesma bunius* (*Raimundo*, comm. *Baker*, 1890); on dead *Bauhinia malabarica* (*Copeland*, comm. *Baker*, 2227)

*** Nummularia anthracodes (Fr.) Cke. var. gliricidiae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2209—Los Baños, on dead *Gliricidia sepium* (*Baker*, 2172^b and 2181)

Nummularia clypeus (Schw.) Cke.

1909 *Theissen*, Ann. Myc. VII, 11

*** Nummularia cookeana (Sacc.) Rehm**

1882 *Saccardo*, Syll. Fung. I, 399 (*Nummularia suborbicularis* var. *cookeana*)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2273—Mt. Maquiling, on dead fallen branches (*Baker*, 2729)

Nummularia glycyrrhiza (Berk. et Curt.) Sacc.

1854 *Berkeley* et *Curtis*, Exot. Fung. Schw. 285 (*Hypoxylon*)

1909 *Theissen*, Ann. Myc. VII, 11

1914 *Sydow*, Philip. Journ. Sci. IX, C, 167—Lake Manguao, Palawan, on dead trees (*Merrill*, 8950)

Nummularia gracilenta Syd.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 329

1913 *Rehm*, Philip. Journ. Sci. VIII, C, 400 (*Nummularia scutata* non *Berk.* et *Curt.*)

1914 *Baker*, Leafl. Philip. Bot. VI, 2131 (*Nummularia scutata* non *Berk.* et *Curt.*—This reference goes to *Nummularia gracilenta*, while *Nummularia scutata* drops from the list

1914 *Rehm*, Leafl. Philip. Bot. VI, 2209—Los Baños, on dead *Litsea glutinosa* (*Baker*, 2256)

*** Nummularia papyraceae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2208—Los Baños, on a rotten trunk (*Baker*, 2000)

Nummularia philippinensis Rick.
1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Lamao, Prov. Bataan, on dead wood (*Merrill*, 3537)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 328

Nummularia placentiformis (Berk. et Curt.) Sacc.
1867 *Berkeley* et *Curtis*, Cub. Fung. no. 815 (*Hypoxylon*)
1882 *Saccardo*, Syll. Fung. I, 399
1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Prov. Zamboanga, on rotten limbs (*Copeland*, 745)

Nummularia urceolata Rehm
1914 *Sydow*, Philip. Journ. Sci. IX, C, 167—Taytay, Palawan, on dead trees (*Merrill*, 8731)

*** Poronia hypoxyloides Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2209—Los Baños, on burnt and partially decayed grass roots (*Copeland*, comm. *Baker*, 1539)

Poronia ustorum Pat.
1887 *Patouillard*, Champ. N. Caled. 8—New Caledonia, on grass roots
1891 *Saccardo*, Syll. Fung. IX, 542

Ustulina macrosperma (Mont.) Sacc.
1882 *Saccardo*, Syll. Fung. I, 351
1884 *Cooke*, Grev. XII, 3 (*Ustulina tessellata*)
1900 *Hennings*, Warb. Mons. I, 70

Ustulina maxima (Cke.) Schroet.
1908 *Hennings*, Philip. Journ. Sci. III, C, 50—Prov. Rizal,

on a dead *Ficus* (*Foxworthy*, 56); Prov. Benguet (*Elmer*, 6153)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 335

*** Ustulina placentiformis Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2207—Los Baños, on rotten wood (*Raimundo*, comm. *Baker*, 1679 and 1184)

*** Ustulina placentiformis Rehm** var. **magnifica Rehm**
1914 *Saccardo*, Leafl. Philip. Bot. VI, 2207—Mt. Maquiling, on rotten trunks (*Baker*, 2133)

Ustulina zonata (Lev.) Sacc.
1882 *Saccardo*, Syll. Fung. I, 352
1914 *Baker*, Leafl. Philip. Bot. VI, 2132—Under this reference change number 1191 to 3516

Xylaria allantoidea Berk.
1908 *Theissen*, Ann. Myc. VI, 533
1914 *Rehm*, Leafl. Philip. Bot. VI, 2272—Mt. Maquiling, on a dead trunk (*Baker*, 2598)

Xylaria anisopleura Mont.
1856 *Montagne*, Syll. Crypt. 688—Guyana
1882 *Saccardo*, Syll. Fung. I, 323

*** Xylaria bacillaris Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2212—Los Baños, on a dead *Spondias* (*Baker*, 1573)

Xylaria bataanensis Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 52—Lamao, Prov. Bataan, on rotten wood (*Merrill*, 3530; *Copeland*, 162)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 350

*** Xylaria clavata (Scop.) Schrank**

1778 *Scopoli*, Fl. Carn. II, 398 (*Valsa*)
1789 *Schrank*, Bayr. Fl. II, 566
1914 *Rehm*, Leafl. Philip. Bot. VI, 2209—Los Baños, on dead *Tamarindus indicus* (*Mirasol*, comm. *Baker*, 1466)

Xylaria copelandii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 52—Lamao, Prov. Bataan, on a *Calamus* (*Copeland*, 198)

Xylaria dealbata Berk. et Curt.

1854 *Berkeley* et *Curtis*, Exot. Fung. Schw. 284
1882 *Saccardo*, Syll. Fung. I, 323

Xylaria euglossa Fr.

1851 *Fries*, Nov. Symb. 124—Costa Rica
1882 *Saccardo*, Syll. Fung. I, 324
1914 *Rehm*, Leafl. Philip. Bot. VI, 2210—Los Baños, on a rotten trunk (*Raimundo*, comm. *Baker*, 1674)

*** Xylaria exalbata Berk. et Brm.**

1870 *Berkeley* et *Broome*, Fung. Ceylon 1043
1914 *Rehm*, Leafl. Philip. Bot. VI, 2210—Mt. Maquiling, on rotten trunks (*Baker*, 2126)

Xylaria gigantea (Zipp. et Lev.) Fr.

1882 *Saccardo*, Syll. Fung. I, 324
1907 *Bresadola*, Ann. Myc. V, 240
1909 *Rehm*, Ann. Myc. VII, 136—*Rehm*, Ascom. exsicc. no. 1811
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 340

Xylaria gracilenta Syd.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 348

Xylaria grammica Mont.
1856 *Montagne*, Syll. Crypt. no. 680
1882 *Saccardo*, Syll. Fung. I, 317
1909 *Theissen*, Ann. Myc. VII, 351

Xylaria hypoxylon (Linn.) Grev.
1907 *Guegnen*, Bull. Soc. Myc. Fr. XXIII, 186-217
1910 *Freeman*, Ann. Myc. VIII, 192

*** Xylaria janthino-velutina Mont.**
1856 *Montagne*, Syll. Crypt. no. 690
1914 *Rehm*, Leafl. Philip. Bot. VI, 2212—Los Baños, on a woody leguminous pod lying on the ground (*Raimundo*, comm. *Baker*, 1649)

Xylaria juruensis Henn.
1914 *Baker*, Leafl. Philip. Bot. VI, 2134—Under this reference change number 1120 to 3517

Xylaria myosurus Mont.
1856 *Montagne*, Syll. Crypt. no. 700
1882 *Saccardo*, Syll. Fung. I, 311
1914 *Rehm*, Leafl. Philip. Bot. VI, 2211—Mt. Maquiling, on rotten trunks (*Baker*, 2123)

*** Xylaria nigripes (Klotz.) Sacc.**
1832 *Klotzsch*, Linnaea VII, 203 (*Sphaeria*)
1891 *Saccardo*, Syll. Fung. IX, 527
Rehm, Hedw. XXVIII, 299
1908 *v. Hoehnel*, Fragm. Myc. V, 10 (Kais. Ak. Wiss. Wien CXVII)
Petch, Ann. Myc. V, 1 (*Sclerotium stipitatum Berk.* et *Curt.*)
1909 *Rehm*, Ann. Myc. VII, 136—*Rehm*, Ascom. exsicc. no. 1810
1914 *Rehm*, Leafl. Philip. Bot. VI, 2210—Los Baños,

on earth (*Copeland*, comm. *Baker*, 1250; *Raimundo*, comm. *Baker*, 1163)

Xylaria obovata Berk.
Berkeley, Exot. Fung. Hook. (*Sphaeria*)
1867 *Berkeley*, Cub. Fung. no. 785

Xylaria obtusissima (Berk.) Sacc.
1852 *Berkeley*, Fung. St. Dom. 11 (*Hypoxylon*)
1882 *Saccardo*, Syll. Fung. I, 318

* **Xylaria pallida Berk.** et **Curt.** var. **luzonensis Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2211—Morong Valley, Prov. Rizal, on dead trunk of *Gliricidia sepium* (*Raimundo*, comm. *Baker*, 3512—Number wrongly cited as 1258)

Xylaria polymorpha Grev.
1909 *Guegnen*, Compt. Rend. Soc. Biol. Paris LXVI, 453-477
1909 *Guegnen*, Bull. Soc. Myc. Fr. XXV, 89-97
1914 *Rehm*, Leafl. Philip. Bot. VI, 2211—Los Baños, on rotten wood (*Raimundo*, comm. *Baker*, 1679)

Xylaria scruposa (Fr.) Berk.
1828 *Fries*, Elench. II, 55 (*Sphaeria*)
1867 *Berkeley*, Cub. Fung. no. 802
1909 *Theissen*, Ann. Myc. IX, 351

* **Xylaria tabacina (Kickx) Berk.**
1841 *Kickx*, Bull. Acad. Brux. VII, 11 (*Hypoxylon*)
Berkeley, Exot. Fung. Hook. 397 (*Sphaeria telfairii*)
Cooke, Grev. XI, 89 (*Xylaria involuta Klotz.* in herbarium and *Sphaeria telfairii Berk.*)
1882 *Saccardo*, Syll. Fung. I, 320 (*Xylaria telfairii*); 324 (*Xylaria tabacina*)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2211—Los Baños, on rotten trunks (*Raimundo*, comm. *Baker*, 1672)

Xylaria tuberiformis Berk.

1853-55 *Berkeley*, Hook. Flor. Nov. Zeal. II, 204
1882 *Saccardo*, Syll. Fung. I, 324
1914 *Rehm*, Leafl. Philip. Bot. VI, 2272—Los Baños, on dead wood (*Sablan*, comm. *Baker*, 2555)

HYSTERIALES

HYPODERMATACEAE

*** Lophodermium aleuritis Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2232—Los Baños, on dead leaves of *Aleurites moluccana* (*Reyes*, comm. *Baker*, 2076)

Lophodermium arundinaceum (Schrad.) Chev.

Schrader, Journ. Bot. II, 63 (*Hysterium*)
1826 *Chevallier*, Flor. Paris I, 435
1883 *Saccardo*, Syll. Fung. II, 795

Lophodermium passiflorae Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2232—Los Baños, on dead *Passiflora quadrangularis* (*Baker*, 40^{b} and 1687)

*** Lophodermium reyesianum Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2233—Los Baños, on fallen leaves in the forest (*Reyes*, comm. *Baker*, 1585)

*** Lophodermium rotundatum Syd.**

1914 *Sydow*, Ann. Myc. XII, 201—Los Baños, on dead leaves of a *Dillenia* (*Baker*, 2099)

HEMIHYSTERIACEAE

Hysterostomella psychotriae Syd.

Exsiccatus: *Sydow,* Fung. exot. no. 138

* **Hysterostomella tetracerae (Rud.) v. Hoehn.**
1914 *Sydow,* Philip. Journ. Sci. IX, C, 184—Taytay, Palawan, on *Tetracera sarmentosa* (*Merrill,* 8750)

HYSTERIACEAE

Aldona stella-nigra Rac.
1900 *Raciborski,* Paras. Alg. und Pilze Javas I, 19
1914 *Baker,* Leafl. Philip. Bot. VI, 2137—err. typ. *atella-nigra*
1914 *Sydow,* Philip. Journ. Sci. IX, C, 184—Mt. Capoas, Palawan, on *Pterocarpus indicus* (*Merrill,* 9086)

Exsiccatus: *Sydow,* Fung. exot. no. 38

Glonium bambusinum Syd.
1914 *Sydow,* Philip. Journ. Sci. IX, C, 184—Malampaya Bay, Palawan, on dead logs (*Merrill,* 8939); Lake Manguao, on logs (*Merrill,* 8947)

Hysterium hoyae Henn.
1908 *Hennings,* Philip. Journ. Sci. III, C, 50—Davao, Mindanao, on a *Hoya* (*Copeland,* 628)
1913 *Saccardo* et *Trotter,* Syll. Fung. XXII, 568

Schizothyrium aceris (Henn. et Lind.) Pat.
1900 *Raciborski,* Paras. Alg. und Pilze Javas II, 18
1908 *Hennings,* Philip. Journ. Sci. III, C, 52—Mt. Halcon, Mindoro, on *Acer philippina* (*Merrill,* 5537)

TUBERALES

MYRIANGIACEAE

With *Eurytheca deSeyn.*, *Myriangium Mont.* et *Brm.*, *Kusanoa Henn.*, *Anhellia Rac.* and *Uleomyces Henn.* None reported

SACCARDIACEAE

With *Saccardia Cke.* and *Dictyonella v. Hoehn.* None reported

PHILLIPSIELLACEAE

With *Phillipsiella Cke.* and *Protasia Rac.* None reported

ELSINOEACEAE

With *Elsinoe Rac.* and *Myriangina Henn.*

Elsinoe canavaliae Rac.

1914 *Baker*, Leafl. Philip. Bot. VI, 2146—Placed in the *Exoascaceae*

COOKELLACEAE

With *Ascosorus Henn.* et *Rar.*, *Leptophyma Sacc.*, *Cookella Sacc.* and *Ascomycetella Ell.* None reported

ARGYRIACEAE

With *Argyrium Fr.*, *Henningsiella Rehm*, *Lecideopsella v. Hoehn.*, *Argyronoella v. Hoehn.*, *Moelleriella Wint.*, *Argyrona v. Hoehn.* and *Argyriopsis Sacc.* et *Syd.* None reported

DISCALES

CENANGIACEAE

*** Cenangella gliricidiae Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2279—Los Baños, on dead *Gliricidia sepium* (*Baker*, 2177)

BULGARIACEAE

Bulgaria pusilla Syd.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 726

Haematomyces carneus Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2235—Los Baños, on rotten branches (*Baker*, 1848; *Raimundo*, comm. *Baker*, 3514—This number was wrongly cited as 1919)

PATELLARIACEAE

With *Patinella Sacc.*, *Pseudophacidium Karst.*, *Placographa Fr.*, *Robertomyces Starb.*, *Lagerheimia Sacc.*, *Patellea Fr.*, *Karschia Koerb.*, *Patellaria Wahl.*, *Lecanidion Rabenh.*, *Stilbopeziza Speg.*, *Leptopeziza Rost.*, *Blitrydium deNot.*, *Pleiopatella Rehm* and *Tryblidaria Sacc.*

* **Leptopeziza mindanaensis (Henn.) Pat.**

1908 *Hennings*, Philip. Journ. Sci. III, C, 54—Mt. Apo, Mindanao, on a dead branch (*Copeland*, 1100)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 758

MOLLISIACEAE

Calopeziza mirabilis Syd.

1914 *Rehm*, Ann. Myc. XII, 174—Los Baños, on *Premna odorata* (*Raimundo*, comm. *Baker*)—*Rehm*, Ascom. exsicc. no. 2122

1914 *Rehm*, Leafl. Philip. Bot. VI, 2235—Los Baños, on *Premna odorata* (*Raimundo*, comm. *Baker*, 1088; *Reyes*, comm. *Baker*, 1545)

Mellitosporiopsis gigantispora (Rehm) Sacc. et Syd.

Saccardo et *Sydow*, Syll. Fung. XVI, 752

1914 *Rehm*, Leafl. Philip. Bot. VI, 2237—Los Baños, on a *Rhaphidophora* (*Raimundo*, comm. *Baker*, 1817 b)

* **Mellitosporiopsis pachycarpa Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2237—Los Baños, on a *Rhaphidophora* (*Raimundo*, comm. *Baker*, 1817 g)

Mellitosporiopsis pseudopezizoides Rehm
1914 *Rehm*, Leafl. Philip. Bot. VI, 2237—Los Baños, on an *Olax* (*Reyes*, comm. *Baker*, 1602)

*** Mollisia copelandii Rehm**
1907 *Rehm*, Ann. Myc. V, 545—Distr. Zamboanga, Mindanao, on leaves of a *Caryota* (*Copeland*)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 666

Mollisia ravida Syd.
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 664

*** Orbilia curvatispora Boud.**
Boudier, Bull. Soc. Myc. Fr. IV, 80
1889 *Saccardo*, Syll. Fung. IX, 627
1914 *Rehm*, Leafl. Philip. Bot. VI, 2225—Los Baños, on decorticated wood (*Baker*, 696 b)

Psorotheciopsis decipiens Rehm var. **bispora Rehm**
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 690

HELOTIACEAE

*** Coryne meliolicola (Henn.) v. Hoehn.**
Hennings, Jahrb. Syst. 509 (*Calloria*)
1909 *v. Hoehnel*, Fragm. Myc. VI, 106
1914 *Rehm*, Leafl. Philip. Bot. VI, 2280—Los Baños, on *Meliola vilis* on a *Callicarpa* (*Reyes*, comm. *Baker*, 1949)

*** Dasyscypha cyatheae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2280—Mt. Maquiling, on dead rachis of *Cyathea caudata* (*Baker*, 2727)

Ombrophila sanguinea Rehm

Ombrophila sanguinea Rehm (non *Ombrophila helotioides*

Rehm). On dead sticks on the ground, Mt. Maquiling, leg. *C. F. Baker*, no. 59; leg. *C. F. Baker*, nos. 209 and 528. *Ombrophila helotioides Rehm* leg. *M. B. Raimundo*, comm. *C. F. Baker*, no. 1671. *Ombrophila helotioides Rehm*, Ascom. exsicc. no. 1275 plane diversa species! (*Rehm*, in litt.)

PEZIZACEAE

*** Humaria conformis Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2233—Los Baños, on fragments of vegetable matter on surface of the ground (*Raimundo*, comm. *Baker*, 1427)

Humaria raimundoi Rehm

1914 *Rehm*, Leafl. Philip. Bot. VI, 2233—Los Baños, on dead *Leucaena glauca* (*Baker*, 2101)

*** Lachnea lurida Henn. et Nym**

Hennings et *Nym*, Warb. Mons. I, 35

1914 *Rehm*, Leafl. Philip. Bot. VI, 2233—Mt. Maquiling, on rotten bark (*Baker*, 2121)

*** Macropodia craterella (Hed.) Rehm**

Hedwig, Musci Frond. II, 55 (*Octospora*)

Persoon, Syn. Fung. 645 (*Peziza*)

Quelet, Enchir. Fung. 274 (*Helvella*)

Rehm, Discom. 968

1914 *Rehm*, Leafl. Philip. Bot. VI, 2281—Mt. Maquiling, on the ground (*Baker*, 2722)

Pilocratera celebica Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 54—Mindoro, on dead wood (*Whitford*, 1418)

*** Plicaria bananincola Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2234—Los Baños, on dead *Musa sapientum* (*Raimundo*, comm. *Baker*, 1490)

*** Trichaleurina polytricha Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2234—Los Baños, on rotten wood (*Raimundo*, comm. *Baker*, 1470)

STICTIDACEAE

*** Propoliopsis arengae Rehm**
1914 *Rehm*, Leafl. Philip. Bot. VI, 2279—Los Baños, on *Arenga saccharifera* (*Reyes*, comm. *Baker*, 2545 a)

TRYBLIDIACEAE

*** Tryblidiella luzonensis Rehm** n. n.
1914 *Rehm*, Leafl. Philip. Bot. VI, 2231—Los Baños, on *Leucaena glauca* (*Raimundo*, comm. *Baker*, 1580 a)

Tryblidiella mindanaensis Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 53—Distr. Zamboanga, Mindanao, on bark (*Copeland*, 720)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 569
1914 *Rehm*, Leafl. Philip. Bot. VI, 2231—Los Baños, on dead *Hibiscus rosa-sinensis* (*Baker*, 1423); on fallen branches in the forest (*Reyes*, comm. *Baker*, 1587 and 1638); on dead stems of *Passiflora quadrangularis* (*Baker*, 1687); on dead branches of a *Citrus* (*Reyes*, comm. *Baker*, 1969); on dead *Mallotus philippinensis* (*Raimundo*, comm. *Baker*, 1854)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 184—Taytay, Palawan, on dead *Pometia pinnata* (*Merrill*, 8825)

Tryblidiella rufula (Spreng.) Sacc.
1904 *Rehm*, Ann. Myc. II, 524
1908 *Theissen*, Ann. Myc. VI, 534
1914 *Baker*, Leafl. Philip. Bot. VI, 2145 (err. typ. *rugula*) —Under this reference omit number 32 which belongs to *Tryblidiella mindanaensis*)

1914 *Rehm*, Leafl. Philip. Bot. VI, 2231—Los Banos, on dead *Morus alba* (*Raimundo*, comm. *Baker*, 1616)

*** Urnula philippinarum Rehm**

1914 *Rehm*, Leafl. Philip. Bot. VI, 2281—Los Banos, on dead wood (*Baker*, 2365)

PHACIDIACEAE

Rhytisma lagerstroemiaea Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 54—Lamao, Prov. Bataan, on *Lagerstroemia speciosa* (*Copeland*, 281)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 749

1914 *Sydow*, Philip. Journ. Sci. IX, C, 184—Lake Manguao, Palawan, on *Lagerstroemia speciosa* (*Merrill*, 8949)

Rhytisma viburni Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 54—Prov. Benguet, on a *Viburnum* (*Merrill*, 4986)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 749

GYMNOASCALES

ENDOMYCETACEAE

None reported

ATICHIACEAE
(Seuratiaceae)

None reported

ZYGOMYCALES

MUCORACEAE

Rhizopus artocarpi Rac.

1900 *Raciborski*, Paras. Alg. und Pilze Javas I, 11

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 421—Los Baños, inflorescence of *Artocarpus integrifolia* (*Baker*, 812)

OOMYCALES

SYNCHYTRIACEAE

Synchytrium aecidioides (Peck) Lagerh.

Peck, 24th Rep. N. Y. State Mus. 88 (*Uredo*)
Thuemen, Myc. Univ. no. 538 (*Uredo peckii*)
Farlow, Bull. Bussey Inst. II, 229 (*Synchytrium fulgens* var. *decipiens*)
Farlow, Bot. Gaz. X, 240 (*Synchytrium decipiens*)
1888 *Berlese* et *deToni*, Syll. Fung. VII, 292 (*Synchytrium decipiens*)

SPHAEROPSIDALES
(Phomatales)

SPHAERIOIDACEAE
(Phomataceae)

Botryodiplodia anceps Sacc. et Syd.

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 318—Los Baños, on dead *Morus alba* (*Baker*, 783)

*** Botryodiplodia curta Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 556—Manila, on dead stems of *Ricinus communis* (*Graff*, 20647)

*** Ceuthospora garciniae Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 185—Taytay, Palawan, on leaves of a *Garcinia* (*Merrill*, S. 177 and 8777); Lake Manguao, on the same host (*Merrill*, 8943)

Coniothyrium coffeae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 56—Kabayan, Prov. Benguet, on *Coffea arabica* (*Merrill*, 4907)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 972

Coniothyrium gmelinae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 55—Davao,

Mindanao, on dead limbs of *Gmelina villosa* (*Copeland*, 512 pt.)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 973

Coniothyrium oroxyli Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 55—Davao, Mindanao, on rotten capsules of *Oroxylum indicum* (*Copeland*, 886)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 973

* **Cytospora aberrans Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 307—St. Tomas, on dead bark of a *Citrus* (*Graff*, 20945)

Cytospora calami Syd.
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 962

Cytospora lirella Syd.
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 962

* **Diplodia artocarpina Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 309—Los Baños, on dying leaves of *Artocarpus integrifolia* (*Baker*, 2024)

* **Diplodia artocarpi Sacc.**
1914 *Saccardo*, Ann. Myc. XI, 556—Los Baños, on dead limbs of *Artocarpus incisa* (*Raimundo*, comm. *Baker*, 1400)

* **Diplodia caricae Sacc.**
1913 *Saccardo*, Ann. Myc. XI, 555—Los Baños, on petioles of *Carica papaya* (*Baker*)

* **Diplodia circinans Berk.** et **Brm.**
1870 *Berkeley* et *Broome*, Fung. Ceylon no. 786
1884 *Saccardo*, Syll. Fung. III, 371

1914 *Saccardo*, Ann. Myc. XII, 809—Bago, Negros, on dead leaves of a *Yucca* (*Merrill*)

*** Diplodia cococarpa Sacc.**

1884 *Saccardo*, Syll. Fung. III, 372

1914 *Saccardo*, Ann. Myc. XII, 309—Los Baños, on husks of *Cocos nucifera* (*Baker*, 1961)

*** Diplodia cococarpa var. malaccensis Tassi**

1898 *Tassi*, Bull. Lab. Bot. Univ. Siena I, 11—Singapore

1899 *Saccardo* et *Sydow*, Syll. Fung. XIV, 938

1914 *Sydow*, Philip. Journ. Sci. IX, C, 185—Taytay, Palawan, on the husk of *Cocos nucifera* (*Merrill*, 8830)

*** Diplodia coicis Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 309—Manila, on dead fruits of *Coix lacrimi-jobi* (*Graff*, 20621)

*** Diplodia daturae Sacc.**

1914 *Saccardo*, Ann. Myc XII, 308—Manila, on dead stems of *Datura alba* (*Merrill*, 8402)

Diplodia durionis Sacc. et Syd.

1913 *Saccardo* et *Sydow*, Ann. Myc. XI—Los Baños, on seed coats of *Durio zibethinus* (*Baker*, 44)

Diplodia fructus-pandani Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 56—Lamao, Prov. Bataan, on fruit coats of *Pandanus luzonensis* (*Merrill*[b])

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 1000

Diplodia gmelinae Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 56—Davao, Mindanao, on *Gmelina villosa* (*Copeland*, 512 pt.)

Diplodia hibisci Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 56—Manila, on dead stems of *Hibiscus rosa-sinensis* (*Merrill*, 4116 pt.)

* **Diplodia litseae Henn.**

Hennings, Verh. Bot. Ver. Prov. Brandbg. XXX, 168

1902 *Saccardo* et *Sydow*, Syll. Fung. XVI 921

1914 *Saccardo*, Ann. Myc. XII, 309—Los Baños, on dead branches of *Litsea glutinosa* (*Raimundo*, comm. *Baker*, 2024)

* **Diplodia manihoti Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 310 (err. typ. *maniothi*)—Los Baños, on dead stems of *Manihot utilissima* (*Raimundo*, comm. *Baker*, 1614)

* **Diplodia moringae Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 310—Los Baños, on dead bark of *Moringa pterygosperma* (*Baker*, 1007)

* **Diplodia phaseolina Sacc.**

1914 *Saccardo*, Ann. Myc. XII—Los Baños, on pods of *Phaseolus lunatus* (*Baker*, 1715)

* **Diplodia ricinicola Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 308—Manila, on dead stems of *Ricinus communis* (*Graff*, 21065)

* **Diplodia solanicola Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 310—Los Baños, on dead stems of *Solanum verbascifolium* (*Baker*, 1006)

* **Diplodia synedrellae Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 555—Manila, on dead stems of *Synedrella nodiflora* (*Merrill*, 8604)

*** Dothiorella crastophila Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 555—Manila, on stems of a *Bambusa* (*Graff*, 19130)

*** Haplosporella manilensis Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 555—Manila, on dead stems of *Ricinus communis* (*Merrill*, 8386)

*** Hendersonia coicis Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 310—Manila, on *Coix lacrimi-jobi* (*Graff*, 20641)

Lasiodiplodia theobromae (Pat.) Griff. et Maubl.

1905 *Appel* et *Laubert*, Arb. K. Biol. Anst. Landw. Forstwirtschaft. V, heft 3, 147 (*Lasiodiplodia nigra*)
1909 *Griffon* et *Maublanc*, Bull. Soc. Myc. Fr. XXV, 51
1910 *Petch*, Ann. Roy. Bot. Gard. Peradeniya IV, 445-465
1910 *Petch*, Trop. Life VI, 27
1912 *Fredholm*, West Ind. Bull. XII, 308-310
1913 *Berthault*, Bull. Soc. Myc. Fr. XXIX, 359-361
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 1011

Macrophoma cyamopsidis Syd.

1913 *Sydow*, Ann. Myc. XI, 405—Los Baños, an *Cyamopsis psoraleoides* (*Baker*, 1625)

Macrophoma musae (Cke.) Berl. et Vogl.

Cooke, Grev. (*Sphaeropsis*)—India
1884 *Saccardo*, Syll. Fung. III, 163 (*Phoma*)
1886 *Berlese* et *Voglino*, Atti Soc. Venet. Tren. 187
1892 *Saccardo*, Syll. Fung. X, 199

Exsiccatus: *Sydow*, Fung. exot. no. 189

Macrophoma punctiformis Sacc. et Syd.

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 316—Los Baños, on *Corypha elata*—err. cit. *umbraculifera* (*Baker*, 28)

Macrophoma seriata Sacc. et Syd.

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 316—Los Baños, on *Corypha elata*—err. cit. *umbraculifera* (*Baker*, 767)

*** Phellostroma hypoxyloides Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 185—Taytay, Palawan, on a dead *Areca* (*Merrill*, 8894)

*** Phoma bakeriana Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 306—Los Baños, on dying pods of *Vigna unguiculata* (*Baker*, 1711)

*** Phoma fallaciosa Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 306—Los Baños, on dead stems of *Poinciana pulcherrima* (*Baker*, 1692)

*** Phoma herbarum West.**

Westendorp, Exs. 965; Mich. II, 92

1884 *Saccardo*, Syll. Fung. III, 133

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 876

1913 *Saccardo*, Ann. Myc. XI, 554—Los Baños, on dead branches of *Manihot utilissima* (*Raimundo*, comm. *Baker*, 1107); Manila, on pods of *Cassia occidentalis* (*Merrill*, 8463)

1914 *Saccardo*, Ann. Myc. XII, 306—Los Baños, on dead stems of *Dysoxylum decandrum* (*Raimundo*, comm. *Baker*, 1913)

*** Phoma oleracea Sacc.**

1877 *Saccardo*, Mich. I, 91

1884 *Saccardo*, Syll. Fung. III, 135

1910 *Manns*, Science XXXII, 726-727

1911 *Manns*, Phytopathology I, 28

1914 *Saccardo* Ann. Myc. XII, 306—Los Baños, on dead stems of *Dioscorea alata* (*Raimundo*, comm. *Baker*, 1610)

*** Phoma sabdariffae Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 554—Manila, on dead stems of *Hibiscus sabdariffa* (*Graff*, 19138; *Merrill*, 8450)

*** Phoma sesamina Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 306—Los Baños, on dead *Sesamum indicum* (*Baker*, 1005 a)

*** Phomopsis arecae Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 184—Silanga, Palawan, on dead petioles and leaf rachis of *Areca catechu* (*Merrill*, 8930 and 8934)

*** Phomopsis cinerascens (Sacc.) Bubak**

1884 *Saccardo*, Syll. Fung. III, 96
1911 *Diedicke*, Ann. Myc. IX, 22
1914 *Saccardo*, Ann. Myc. XII, 306—Cabancalan, Negros, on branches of a *Ficus* (*Merrill*, 6455)

*** Phomopsis dioscoreae Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 555—Pauai, Prov. Benguet, on dead stems of a *Dioscorea* (*Copeland*, comm. *Baker*, 1283)

*** Phomopsis myriosticta Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 306—Los Baños, on dead branches of *Poinciana pulcherrima* (*Raimundo*, comm. *Baker*, 1622)

Phyllosticta acoridii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 55—Mt. Malindang, Mindanao, on an *Acoridium* (*Mearns* et *Hutchinson*, 4958)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 860

* **Phyllosticta circumsepta Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 305—Los Baños, on dying rind of *Citrus nobilis* (*Baker*, 564)

Phyllosticta cocophila Pass.

1875 *Passerini*, Diagn. Fung. Nuov. III, no. 63

1892 *Saccardo*, Syll. Fung. X, 135

Phyllosticta graffiana Sacc.

1913 *Saccardo*, Ann. Myc. XI, 316—Manila, on *Dioscorea fasciculata* (*Graff*)

Phyllosticta siphonodontis Sacc.

1913 *Saccardo*, Ann. Myc. XI, 315—Los Baños, on dead leaves of *Siphonodon celastrineus* (*Baker*, 778)

Placosphaeria durionis Syd.

1914 *Baker*, Leafl. Philip. Bot. VI, 215—(err. typ. *duriones*)

Placosphaeria merrillii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 55—Palmas Isl., on a *Derris* (*Merrill*, 5331)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 947

Placosphaeria tiglii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 55—Balabac Isl., Palawan, on *Croton tiglium* (*Mangubat*, 518)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 947

Exsiccatus: *Sydow*, Fung. exot. no. 42—Basagan River, Mindanao, on *Croton tiglium* (*Merrill*)

Septoria moelleriana Bres.

1908 *Hennings*, Philip. Journ. Sci. III, C, 56—Prov. Zambales, on *Canavalia obtusifolia* (*Merrill*, 3609)

Septoria palmarum Sacc.
1892 *Saccardo*, Syll. Fung. X, 381
1913 *Saccardo*, Ann. Myc. XI, 318—Los Baños, on *Corypha elata*—err. cit. *umbraculifera* (*Baker*, 768)

Sphaeropsis pandani Henn.
1908 *Hennings*, Philip. Journ. Sci. III, C, 55—Davao, Mindanao, on dead leaves of a *Pandanus* (*Copeland*, 592)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 983

This mixture has furnished the type for *Linospora pandani Syd.* See Ann. Myc. XI, 60 for a discussion of the matter

* **Stagonospora varians Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 310—Mt. Banahao, on *Symplocos whitfordi* (*Ramos*, 1958 [a])

Traversoa dothiorelloides Sacc. et **Syd.**
1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 317—Los Baños, on dead branches of *Morus alba*—err. cit. *rubra* (*Baker*, 707)

Traversoa excipuloides Sacc. et **Syd.**
1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 317—Los Baños, on dead bark (*Baker*, 749)

Traversoa excipuloides Sacc. et **Syd.** var. **distans Sacc.** et **Syd.**
1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 317—Los Baños, on dead bark (*Baker*, 562; *Raimundo*, comm. *Baker*, 530)

* **Vermicularia braeviseta Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 307—Manila, on dead stems of *Synedrella nodiflora* (*Graff*, 21089)

*** Vermicularia capsici Syd.**
1913 *Sydow,* Ann. Myc. XI, 329—Madras Pres., on fruits of *Capsicum frutescens* (*McRae,* 23)

This species furnishes an excellent example of how little is known regarding the general distribution of some of our common fungi. *Sydow* had kindly sent me a specimen of this fungus. On its arrival I showed it to *Reyes* and asked him to go out and look for it in the garden. Within ten minutes he returned with the identical species taken from our own peppers at the Agricultural College. It is abundant here

*** Vermicularia fallax Sacc.**
1914 *Saccardo,* Ann. Myc. XII, 307—Los Baños, on dying leaves of *Passiflora edulis* (*Reyes,* comm. *Baker,* 1746)

*** Vermicularia horridula Sacc.**
1914 *Saccardo,* Ann. Myc. XII, 307—Los Baños, on dead stems of *Dolichos uniflorus* (*Reyes,* comm. *Baker,* 1633 b)

*** Vermicularia merrilliana Sacc.**
1914 *Saccardo,* Ann. Myc. XII, 307—Manila, on dead stems of *Datura alba* (*Merrill,* 8396)

*** Vermicularia sesamina Sacc.**
1914 *Saccardo,* Ann. Myc. XII, 308—Los Baños, on dead stems of *Sesamum indicum* (*Baker,* 1005 pt.)

NECTRIOIDACEAE
(Zythiaceae)

*** Aschersonia macularis Syd.**
1914 *Sydow,* Philip. Journ. Sci. IX, C, 187—Taytay, Palawan, on coccids of *Mischocarpus* (*Merrill,* 8855)

*** Aschersonia lecanioides Henn.**

1902 *Hennings*, Hedw. 145—Java, on coccids of *Mangifera indica*

1906 *Saccardo*, Syll. Fung. XVIII, 412—Mt. Maquiling, on coccids of an *Astronia* (*Baker*, 8 and 2205)

Aschersonia novoguineensis Henn.

Exsiccatus: *Sydow*, Fung. exot. no. 192

*** Aschersonia sclerotoides Henn.**

1902 *Hennings*, Hedw. 146

1906 *Saccardo*, Syll. Fung. XVIII, 414

1913 *Saccardo*, Ann. Myc. XI, 556—Lamao, Prov. Bataan, on coccids of a *Citrus* (*Wester*, 19139)

Aschersonia sp. dub.

1908 *Hennings*, Philip. Journ. Sci. III, C, 56—Mt. Halcon, Mindoro, on coccids of fern fronds (*Merrill*, 3178)

LEPTOSTROMATACEAE

(Pycnothyriaceae)

Diedickea singularis Syd.

1913 *Sydow*, Ann. Myc. XI, 268—Cabadbaran (Mt. Urdaneta,) Mindanao, on an undetermined woody plant (*Elmer*, 13673)

*** Ischnostroma merrillii Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 186—Lake Manguao, Palawan, on a *Talauma* (*Merrill*, S. 180)

Melasmia exigua Syd.

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 1157

*** Pirostomella raimundoi Sacc.**
1914 *Saccardo*, Ann. Myc. xii, 308—Los Baños, on dying leaves of *Ficus nota* (*Raimundo*, comm. *Baker*, 2020)

*** Pycnothyrium pandani Syd.**
1914 *Sydow*, Philip. Journ. Sci. ix, C, 187—Taytay, Palawan, on dead leaves of *Pandanus tectorius* (*Merrill*, 8766 and 8844)

MELANCONIALES

MELANCONIACEAE

Colletotrichum arecae Syd.
1914 *Sydow*, Philip. Journ. Sci. ix, C, 188—Lake Manguao, Palawan, on dead sheaths of an *Areca* (*Merrill*, 8958 a); Silanga, on the same (*Merrill*, 8919)

Colletotrichum euchroum Syd.
1914 *Baker*, Leafl. Philip. Bot. vi, 2156—typ. err. *euchronum*

*** Colletotrichum lussoniense Sacc.**
1914 *Saccardo*, Ann. Myc. xii, 311—Los Baños, on dead *Manihot utilissima* (*Raimundo*, comm. *Baker*, 1613)

Colletotrichum pandani Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 194

Colletotrichum papayae (Henn.) Syd.
Hennings, Hedw. 115 (*Gloeosporium*)—Goyaz, Brazil
1895 *Saccardo*, Syll. Fung. xi, 565

Gloeosporium alchorneae Syd.
1913 *Sydow*, Ann. Myc. XI, 405—Los Baños, on *Alchornea rugosa* (*Reyes*, comm. *Baker*, 1560)

*** Gloeosporium aleuriticum Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 311—Los Baños, on dead branches of *Aleurites moluccana* (*Reyes*, comm. *Baker*, 1980)

Gloeosporium canavaliae Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 145

Gloeosporium catechu Syd.
1913 *Sydow*, Ann. Myc. XI, 64—Mt. Maquiling, on dead fruits of *Areca catechu* (*Baker*, 476)

Gloeosporium graffii Syd.

Exsiccatus: *Sydow*, Fung. exot no. 45

Gloeosporium hoyae Syd.
1913 *Sydow*, Ann. Myc. XI, 270—Los Baños, on *Hoya luzonensis* (*Baker*, 836 pt.)

Gloeosporium lebbek Syd.

Exsiccatus: *Sydow*, Fung. exot. no. 193

*** Gloeosporium macrophomoides Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 311—Los Baños, on dead stems of *Sesamum indicum* (*Baker*, 1005 ^{c})

Gloeosporium palmarum Oudm.
1890 *Oudemans*, Contr. Myc. Pays-Bas XIV, 48
1895 *Saccardo*, Syll. Fung. XI, 567

Gloeosporium vanillae Cke.

Cooke, Grev. XV, 18—Colombia
1892 *Saccardo*, Syll. Fung. X, 462

*** Pestalozzia funerea Desm.**

1843 *Desmazieres*, Ann. Sci. Nat. XIX, 235
1884 *Saccardo*, Syll. Fung. III, 791
1913 *Saccardo*, Ann. Myc. XI, 556—Los Baños, on *Mangifera indica* (*Reyes*, comm. *Baker*, 1500)

Pestalozzia microspora Speg. var. **philippinensis Sacc.** et **Syd.**

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 319—Los Baños, on dead leaves of a *Eugenia* (*Baker*, 558)
1914 *Baker*, Leafl. Philip. Bot. VI, 2158—Under this reference change number 658 to 558

Pestalozzia palmarum Cke.

1900 *Raciborski*, Paras. Alg. und Pilze Javas I, 32
1906 *Petch*, Trop. Agrcl. XXVII, 489-491
1908 *Hennings*, Philip. Journ. Sci. III, C, 56—Davao, Mindanao, on dead leaves of *Cocos nucifera* (*Copeland*, 337)
1911 *Leininger*, Centralb. für Baktr. II, Abth. 29, 3-35
1913 *Sydow*, Ann. Myc. XI, 328
1914 *Sydow*, Philip. Journ. Sci. IX, C, 88—Taytay, Palawan, on *Cocos nucifera* (*Merrill*, 8743 and 182)

*** Pestalozzia pauciseta Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 311—Los Baños, on dying leaves of a *Canarium* (*Reyes*, comm. *Baker*, 1782); on *Litsea glutinosa* (*Baker*, 1799); on *Ptychosperma macarthurii* (*Reyes*, comm. *Baker*, 1843); Taytay, Palawan, on a *Uvaria* (*Merrill*, 8749); on a *Guioa* (*Merrill*, 8867)

Septogloeum arachidis Rac.

1900 *Raciborski*, Paras. Alg. und Pilze Javas I, 34
1905 *Petch*, Trop. Agrcl. XXIV, 103-104

This is undoubtedly the same fungus as that referred to under the name of *Cercospora personata* and it would appear to be more naturally considered a *Septogloeum* than a *Cercospora*. It is one of many fungi whose characters lend themselves readily to a very wide range of opinionative interpretation. However, before this reference is finally made Javan material should be thoroughly studied

HYPHALES

TUBERCULARIACEAE

Cerebella paspali Cke. et Mass.

1891 *Saccardo*, Syll. Fung. IX, 290
1914 *Baker*, Leafl. Philip. Bot. VI, 2078—Placed in *Ustilaginaceae*

Exsiccatus: *Sydow*, Fung. exot. no. 50

*** Dendrochium lussoniense Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 312—Mt. Maquiling, on bark (*Merrill*, 8657)

Hymenopsis cudraniae Mass.

1899 *Massee*, Bull. Miscl. Inform. Kew, 167—India, on *Cudrania javanensis*
1902 *Saccardo* et *Sydow*, Syll. Fung. XVI, 1105

Exsiccatus: *Sydow*, Fung. exot. no. 149

Sigmatomyces bakeri Sacc. et Syd.

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 319—Los Baños, on dead leaves of a *Dillenia* (*Baker*, 697)

Tuberculina persicina (Dittm.) Sacc.

1900 *Raciborski*, Paras. Alg. und Pilze Javas II, 41

1908 *Hennings*, Philip. Journ. Sci. III, C, 42—Banton Isl., on *Aecidium* on *Hewittia bicolor* (*Merrill*, 4164)

1914 *Baker*, Leafl. Philip. Bot. VI, 2159 (*Tubercularia*)

Tubercularia versicolor Sacc. var. **philippinensis Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 320—Los Baños, on dead *Leuceana glauca* (*Baker*, 775)

STILBACEAE

Ciliciopodium grayanum Sacc. et Ell.

Saccardo et *Ellis*, Mich. II, 581

*** Hymenula copelandii Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 558—Los Baños, on dead leaves of *Diospyros discolor* (*Copeland*, comm. *Baker*, 1269)

*** Melanographium spleniosporum Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 558—Los Baños, on rotten culms of *Bambusa blumeana* (*Reyes*, comm. *Baker*, 1113)

Pilacre orientalis Berk. et Brm.

1870 *Berkeley* et *Broome*, Fung. Ceylon no. 905

Regarding this fungus which superficially appears to be clearly stilbaceous, *Mr. Graff* furnishes me the following note: "*Pilacre orientalis Berk.* et *Brm.* does not belong to the *Stilbaceae* but to the *Auriculariaceae*. See *Brefeld* Unters. Myc. VII, 27-69, taf. 1-3, or *Engler* and *Prantl* Natur. Pflanzenfam. teil I, abtheilung 1, page 86. According to *Saccardo's* classification it would come under the *Tremellineae*"

Podosporium gigasporum Sacc. et Syd.

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 319—Los

Baños, on dead *Allaeanthus luzonicus* (*Copeland*, comm. *Baker*, 885)

Sporocybe philippinensis Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 58—Cajoagan, Samar, on wood (*Merrill*, 5241)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 1453

*** Stilbella cinnabarina (Mont.) Lind.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 189—Taytay, Palawan, on dead twigs of *Bruguiera caryophyllacea* (*Merrill*, 8878)

DEMATIACEAE

*** Alternaria brassicae Sacc.**

Saccardo, Mich. II, 172

Saccardo, Fung. Ital. 736

1886 *Saccardo*, Syll. Fung. IV, 546

1913 *Marrenghi*, Proc. Verb. Soc. Tosc. Sc. Nat. XXI, 66-73

1913 *Saccardo*, Ann. Myc. XI, 557—Manila, on dead pods of *Cassia occidentalis* (*Merrill*, 8463c)

*** Brachysporium bakeri Syd.**

1914 *Sydow*, Ann. Myc. XII, 202—Mt. Maquiling, on a *Macaranga* (*Baker*, 2798)

Brachysporium pini-insularis Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Baguio, Prov. Benguet, on leaves of *Pinus insularis* (*Merrill*, 4881)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 1395

*** Campsotrichum heterochaetum Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 557—Los Baños, on dead leaves of *Dillenia philippinensis* (*Teodoro*, comm. *Baker*, 1223)

* **Cercospora alpiniae Syd.**
1914 *Sydow*, Ann. Myc. xii, 202—Mt. Maquiling, on an *Alpinia* (*Baker*, 2221)

Cercospora amorphophalli Henn.
1908 *Hennings*, Philip. Journ. Sci. iii, C, 57—Siassi, on *Amorphophallus campanulatus* (*Merrill*, 5310)

Cercospora armoraciae Sacc.
1873 *Saccardo*, Fung. Venet. v, 188
1886 *Saccardo*, Syll. Fung. iv, 433
1914 *Baker*, Leafl. Philip. Bot. vi, 2160—Under this reference change number 870 to 879

* **Cercospora artocarpi Syd.**
1914 *Sydow*, Ann. Myc. xii, 202—Los Baños, on *Artocarpus incisa* (*Raimundo*, comm. *Baker*, 2608)

* **Cercospora bakeriana Sacc.**
1914 *Saccardo*, Ann. Myc. xii, 314—Los Baños, on dead twigs of *Poinciana pulcherrima* (*Baker*, 1692 pt.)

* **Cercospora bauhiniae Syd.**
1914 *Sydow*, Ann. Myc. xii, 202—Los Baños, on *Bauhinia malabarica* (*Reyes*, comm. *Baker*, 2137)

* **Cercospora canavaliae Syd.**
1914 *Sydow*, Ann. Myc. xii, 203—Los Baños, on *Canavalia ensiformis* (*Baker*, 2029)

Cercospora gliricidiae Syd.
1914 *Baker*, Leafl. Philip. Bot. vi, 2161—Under this reference change number 2076 to 2075

Cercospora helminthostachydis Henn.
1908 *Hennings*, Philip. Journ. Sci. iii, C, 57—Davao,

Mindanao, on *Helminthostachys zeylanica* (*Copeland*, 543)

1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 1424

* **Cercospora lagerstroemiae Syd.**

1914 *Sydow*, Ann. Myc. XII, 203—Los Baños, on *Lagerstroemia speciosa* (*Raimundo*, comm. *Baker*, 2054)

* **Cercospora licualae Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 188—Taytay, Palawan, on *Licuala spinosa* (*Merrill*, 8748)

* **Cercospora lussoniense Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 314—Los Baños, on dying leaves of *Phaseolus lunatus* (*Reyes*, comm. *Baker*, 1534)

Cercospora mangiferae Koord.

1907 *Koorders*, Unters. Java Pilze 236

1913 *Saccardo* et *Trotter*, Syll. Fung. XVI, 1414

Cercospora manihotis Henn.

1907 *Hennings*, Ann. Mus. Congo V, fasc. 2, 104—Congo, on *Manihot utilissima*

1913 *Sydow*, Philip. Journ. Sci. VIII, C, 507 (*Cercospora henningsii Allesch.*)

Cercospora nicotianae Ell. et Ev.

1893 *Ellis* et *Everhart*, Proc. Acad. Sci. Phil. 170

1914 *Sydow*, Philip. Journ. Sci. IX, C, 188—Taytay, Palawan, on *Nicotiana tabacum* (*Merrill*, 8903)

Cercospora occidentalis Cke.

1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Prov. Nueva Ecija. on *Cassia occidentalis* (*Merrill*, 4196)

* **Cercospora occidentalis Cke.** var. **cassicarpa Sacc.**
1913 *Saccardo*, Syll. Fung. XI, 557—Manila, on dead pods of *Cassia occidentalis* (*Merrill*, 8463 [a])

* **Cercospora pachyderma Syd.**
1914 *Sydow*, Ann. Myc. XII, 203—Los Baños, on *Dioscorea alata* (*Raimundo*, comm. *Baker*, 2053)

* **Cercospora pahudiae Syd.**
1914 *Sydow*, Ann. Myc. XII, 203—Los Baños, on *Pahudia rhomboidea* (*Reyes*, comm. *Baker*, 1727)

Cercospora pantoleuca Syd.
1914 *Baker*, Leafl. Philip. Bot. VI, 2162—Under this reference change number 639 to 625

Cercospora personata (Berk. et Curt.) Ell.
1913 *Sydow*, Ann. Myc. XI, 329—India

This species had probably better go to *Septogloeum*, and appears to be the same as *Septogloeum arachidis Rac.* q. v.

* **Cercospora puerariae Syd.**
1914 *Sydow*, Ann. Myc. XII, 204—Los Baños, on *Pueraria phaseoloides* (*Baker*, 2799)

Cercospora pumila Syd.

Exsiccatus: *Sydow*, Fung. exot no 47

Cercospora stizolobii Syd.
1913 *Sydow*, Ann. Myc. XI, 270—Los Baños, on *Stizolobium deeringianum* (*Raimundo*, comm. *Baker*, 892)

Cercospora subsessilis Syd.
1913 *Sydow*, Ann. Myc. XI, 329—Madras Pres., on *Melia azedarach* (*McRae*, 13)

Exsiccatus: *Sydow*, Fung. exot. no. 197

Cercospora subtorulosa Syd.

1913 *Sydow*, Ann. Myc. XI, 270—Los Baños, on *Melicope triphylla*—err. cit. *Allophyllus* (*Baker*, 904)

Cercospora tiglii Henn.

1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Balut Isl., on *Croton tiglium* (*Merrill*, 5423)
1913 *Saccardo* et *Trotter*, Syll. Fung. XXII, 1423

Cercospora ubi Rac.

1900 *Raciborski*, Paras. Alg. und Pilze Javas III, 39

*** Cercosporina barringtoniae Syd.**

1913 *Sydow*, Ann. Myc. XI, 406—Los Baños, on *Barringtonia luzonensis* (*Reyes*, comm. *Baker*, 1555)

Cercosporina carthami Syd.

1913 *Sydow*, Ann. Myc. XI, 406—Los Baños, on *Carthamus tinctorius* (*Baker*, 1248)

*** Cercosporina helicteres Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 189—Taytay, Palawan, on *Helicteres hirsuta* (*Merrill*, 8907)

Cercosporina taccae Syd.

1913 *Sydow*, Ann. Myc. XI, 406—Los Baños, on *Tacca palmata* (*Raimundo*, comm. *Baker*, 533)

*** Cladosporium lineolatum Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 313—Montalban, Prov. Rizal, on dying leaves of *Capparis macrantha* (*Graff*, 16746)

*** Cladosporium epiphyllum (Pers.) Mart.**

1817 *Martius*, Fl. Crypt. Erl. 351

1837 *Corda*, Icon. Fung. I, 14

1886 *Saccardo*, Syll. Fung. IV, 360

1913 *Saccardo*, Ann. Myc. XI, 557—Prov. Benguet, on dead leaves of *Dianella ensifolia* (*Copeland*, comm. *Baker*, 1308)

*** Coniosporium bambusae (Tnue. et Boll.) Sacc.**

Thuemen et *Bolle*, Contr. Fung. Lit. 6 (*Gymnosporium*)

Saccardo, Mich. II, 124

1886 *Saccardo*, Syll. Fung. IV, 244

1913 *Saccardo*, Ann. Myc. XI, 556—Subprov. Bontoc, on rotten stems of a *Bambusa* (*Van Overbergh*, 2524)

Coniosporium circumscissum (Berk. et Brm.) Sacc.

1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Iloilo, (*Copeland*, 37); Mt. Mariveles, Prov. Bataan, on bamboo stems (*Merrill*, 3699)

Coniosporium extremorum Syd.

1913 *Sydow*, Ann. Myc. XI, 270—Los Baños, on *Saccharum officinarum* (*Baker*, 859)

1914 *Baker*, Leafl. Philip. Bot. VI, 2164—err. typ. *extremorium*

Coniosporium lineolatum Sccc. et Syd.

1913 *Saccardo* et *Sydow*, Ann. Myc. XI, 319—Los Baños, on dead stems of *Gigantochloa scribneriana*—err. cit. *Schizostachyum blumei* (*Baker*, 609)

*** Coniosporium punctiforme Sacc.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 188—Taytay, Palawan, on leaves of *Dinochloa scandens* (*Merrill*, 8775); on a *Schizostachyum* (*Merrill*, 8900)

* **Coniosporium unilaterale Sacc. et Peyr.**

1914 *Saccardo* et *Peyronel*, Ann. Myc. XII, 312—Lake Manguao, Palawan, on a *Schizostachyum* (*Merrill*, 8967)

* **Dichotomella areolata Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 312—Los Baños, on dying leaves of *Artocarpus integrifolia* (*Baker*, 419)

* **Exosporium calophylli Syd.**

1914 *Sydow*, Philip. Journ. Sci. IX, C, 189—Taytay, Palawan, on dead twigs of *Calophyllum inophyllum* (*Merrill*, 8784)

* **Fumago vagans Pers.**

1822-28 *Persoon*, Myc. Eur. I, 91
1861-65 *Tulasne*, Sel. Fung. Carp. II, 280
Link, Sp. Pl. Fung. I, 41 (*Cladosporium fumago*)
1886 *Saccardo*, Syll. Fung. IV, 547
1914 *Saccardo*, Ann. Myc. XII, 313—Montalban, Prov. Rizal, on dying leaves of *Sorghum vulgare* (*Graff*, 16746)

* **Helminthosporium caryopsidum Sacc.**

1914 *Saccardo*, Ann. Myc. XII, 313—Prov. Bataan, on rotten seed of *Sorghum vulgare* (*Graff*, 20852)

Helminthosporium inconspicuum Cke. et Ell.

1877-78 *Cooke* et *Ellis*, Grev. VI, tab. 99, f. 19
Cooke, Austral. Fung. tab. 30, f. 316
1881 *Peck*, 24th Rep. N. Y. State Mus. tab. 3, f. 4-6
1886 *Saccardo*, Syll. Fung. IV, 411

* **Helminthosporium inversum Sacc.**

1913 *Saccardo*, Ann. Myc. XI, 557—Manila, on dead decorticated wood of *Erythrina indica* (*Merrill*, 8453)

Helminthosporium ravenelii Curt. et Berk.
1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Prov. Benguet, on a *Sporobolus* (*Elmer*, 5943)

Heterosporium coryphae Syd.

Exsiccatus: *Sydow*, Fung exot. no. 48

*** Periconia pycnospora Fres.**
1850-63 *Fresensius*, Beitr. Myc. 20
Saccardo, Fung. Ital. t. 1890
1886 *Saccardo*, Syll. Fung. IV, 271
1913 *Saccardo*, Ann. Myc. XI, 357—Manila, on dead pods of *Cassia occidentalis* (*Merrill*, 8463 b)

Ramularia catappae Rac.
1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Manila, on *Terminalia catappa* (*Merrill*, 3610)

*** Sarcinella raimundoi Sacc.**
1914 *Saccardo*, Ann. Myc. XII, 313—Morong Valley, Luzon, on dying *Solanum melongena* (*Raimundo*, comm. *Baker*, 2016)

Sporodesmium bakeri Syd.
1914 *Sydow*, Ann. Myc. XII, 204—Los Baños, on dead leaves of *Musa sapientum* (*Baker*, 1728)

Stigmella manilensis Sacc.
1913 *Saccardo*, Ann. Myc. XI, 320—Manila, on dead pods of *Cassia tora* (*Merrill*)

*** Stigmella palawanensis Syd.**
1914 *Sydow*, Philip. Journ. Sci. IX, C, 189—Taytay, Palawan, on *Celastrus paniculatus* (*Merrill*, 8832)

* **Torula herbarum Lk.** forma **quaternella Sacc.**
1913 *Saccardo*, Ann. Myc. XI, 556—Manila, on stems of *Thunbergia grandiflora* (*Merrill*, 8464)

Trichosporium olivatrum Sacc.
1886 *Saccardo*, Syll. Fung. IV, 293
1913 *Saccardo*, Ann. Myc. XI, 320—Antipolo, on a dead *Bambusa* (*Ramos*)

Exsiccatus: *Sydow*, Fung. exot. no. 196

* **Zygosporium oscheoides Mont.**
1842 *Montagne*, Crypt. Cuba II, 78
1837-54 *Corda*, Icon. Fung. VI
1886 *Saccardo*, Syll. Fung. IV, 329
1914 *Saccardo*, Ann. Myc. XII, 312—Los Baños, on dying leaves of a *Polyalthia* (*Baker*, 576)
1914 *Sydow*, Philip. Journ. Sci. IX, C, 188—Lake Manguao, Palawan, on dead leaf sheaths of *Areca catechu* (*Merrill*, 8959 ^{b})

MUCEDINACEAE

Aspergillus delacroixii Sacc. et **Syd.**
1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Lipa, Prov. Batangas, on fruits of *Theobroma cacao* (*Merrill*, 3613)

Aspergillus flavus (deBary) Bref.
Brefeld, Rab. Fung. Eur. no. 2135
1908 *Hennings*, Philip. Journ. Sci. III, C, 57—Davao, Mindanao, on *Morinda bracteata* (*Copeland*, 547)

Aspergillus periconioides Sacc.
1913 *Saccardo*, Ann. Myc. XI, 320—Lamao, Prov. Bataan, on *Carica papaya* (*Graff*)

Exsiccatus: *Sydow*, Fung. exot. no. 195

*** Cercosporella uredinophila Sacc.**

1914 *Saccardo,* Ann. Myc. XII, 312—Manila, on one of the *Uredinaceae* on *Scirpus grossus* (*Graff,* 170)

Microstroma philippinense Syd.

1900 *Engler* et *Prantl*, Pflanzenfam. Teil I, Abth. 1, Nachtr. 105

1914 *Baker*, Leafl. Philip. Bot. VI, 2167—According to current opinion it should go rather to the *Exobasidiaceae*, though it presents a remarkable superficial resemblance to fungi of this family

Exsiccatus: *Sydow,* Fung. exot. no. 154

Oidium erysiphoides Fr.

1821-32 *Fries*, Syst. Myc. III, 432

1886 *Saccardo*, Syll. Fung. IV, 41

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LEAFLETS OF PHILIPPINE BOTANY

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Two Hundred Twenty Six New Species—I *

by

A. D. E. Elmer

ACANTHACEAE

Hemigraphis baracatanense Elm. n. sp.

Biennial herbs; stems solitary or few clustered, mostly erect, crooked at the joints, the larger ones few branched, varying from 1 to 4 dm high, dull green or the nodes purple, curing dark or dull brown, in the early state covered with a dirty yellowish brown and short pubescence, taking roots from the lowermost more or less thickened joints; roots long and wiry. Leaves opposite, flat, spreading horizontally, harsh on the very much paler green or yellowish green nether side, dark green on the upper surface especially along the midrib and nerves, with minute or obscure cystoliths on both sides, otherwise glabrous except the minutely strigose midrib and lateral nerves, lighter gray beneath in the dry state, obovately elongated, subentire toward the cuneate base or obtuse base, rounded at the apex, coarsely or obscurely crenately toothed or serrate along the sides, thickly chartaceous, easily breaking, the larger blades 8 cm long by 3.5 cm wide above the middle of the blade, usually smaller, the smallest ones

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Note,—Proof read by *Emma O. Elmer.*

* Concluded in article 115.

3 cm long; midrib short hairy beneath, almost as prominent along the upper side; lateral nerves 4 to 5 pairs, ascending, only slightly curved, forked at their distal ends, equally prominent on the upper side, reticulations obscure; petiole 5 to 15 mm long, short and dirty yellowish pubescent, flattened along the upper side. Inflorescence erect, 3 to 5 cm long; peduncle very slender and also puberulent, flower bearing toward the top or from above the middle, the flowering spike subtended by a pair of much reduced leaves; rachis angular, minutely ciliate; flower erect, bluish white, sessile in the axils of the bracts, either single or one fertile and accompanied by 1 or 2 sterile ones, opposite, decussately arranged, the apical portion of the spike condensed, scattering after anthesis or toward the base; bracts erect, oblong, foliaceous, subchartaceous, the upper ones 1 cm long, the lower ones 1.5 cm in length, 2 to 3 mm wide, thick at the clawed basal portion, appressed strigose or pseudostrigose, margins perceptibly wavy or subentire, obtuse at both ends; calyx erect, cylindric, nearly 1 cm long, the basal 4 mm united, the upper 6 mm divided into 4 laciniate teeth, midrib portion brown, the sides subhyaline, sparingly ciliate along the segments or pseudostrigose on the back nearly to the base; bud corolla obovoidly elongated, the upper portion cinereously pulverulent, the 5 lobes apparently oblong, the throat more or less hairy, with faint purplish streaks along the inner side; stamens included when young, only 4 were observed; free portion of flattened filament short, adnate and finely ciliate below the middle of the corolla throat; anthers oblong, almost 2 mm long; ovary elongated, deeper brown; style thread-like, exceeding the corolla, terminated by an obliquely dilated stigma.

Type specimen number 11070, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Collected in dry humus covered ground of a steep wooded ravine along the banks of the Baracatan creek at 1500 feet elevation. "Dalingding" in the Bagobo dialect.

Apparently a species of *Hemigraphis*.

Hypoestes apoensis Elm. n. sp.

Suffrutescent or a perennial herb, 1 to 2 m high; stems branched and twigs nodulose, green, terete, when young tawny puberulent, soon becoming glabrous; old bark smooth, brownish; woody tissue soft, greenish toward the center, odorless and tasteless. Leaves alternate or opposed by leaf-like bracts, membranous, curing unequally dark or dull green on its sides, much paler beneath, apex acuminate or caudate, slightly inequilateral toward the obtuse or decurrrently acute base, entire or along the sides shallowly crenately apiculate, glabrous except the nerves beneath, the larger ones 1.5 dm long and 5 cm across at the middle, the smallest or bract-like leaves 1 cm long and broadly lanceolate, some of the middle sized ones elliptic, the largest oblong; midvein glabrous above, dull brown pulverulent beneath; lateral nerves 5 to 7 pairs, the smallest lamina only few nerved, ascendingly curved from the base, anastomosing, reticulations quite evident from beneath; petiole 5 mm long, dark fulvus hairy. Flowers odorless, ascending, leaf opposed or axillary; peduncle few cm long, ascending, strict, ultimately glabrous, occasionally very few and shortly rebranched, pedicels pubescent at first and usually subtended by bracteoles. Fruits usually upon leafless branchlets, dark green, erect, 2.5 cm long, subtended by the persistent calyx segments, angular and constricted below the middle, loculicidally dehiscent from the sharply pointed apex, the upper one half subterete, creased along the septate sides, 2-celled, 4-seeded; the seeds flat, suborbicular, 5 mm across, inserted in the axils of the sharply pointed and upwardly curved partition or placenta projections; calyx 8 mm long, the basal 2 mm united, glabrous except the pulverulent median dorsal portion; segments green or brownish when exposed, 5, erect or only a trifle recurved toward the distal ends, linear or narrowly lanceolate, the margins folded upon the upper side toward the apex and very finely or sparsely ciliate, 3-veined, the midvein stout, the 2 lateral ones faint and more or less united with the middle one by oblique cross bars, 1.25 mm wide, 5 to 6 mm long; corolla white and tubular, constricted toward the basal one half, otherwise saccate and light blue, with whitish veins and veinlets, 3 cm wide across the inflated portion, delicate, caducous; lobes 5 to 8 mm long, the lower pair smaller and acute, the upper and lateral ones much broader and rounded at the apex; stamens 4, inserted at the middle of the corolla, in 2 unequal pairs; filaments dilated, glabrous except toward the briskly hairy base, adnate to the corolla tube, the longer pair nearly 1 cm long, the shorter pair 5 mm only; anthers truncately oblong, 2 mm long at least, 1.25 mm wide at the bilobed base; ovary glabrous, elongated, 3 to 5 mm long, 1.5 mm thick, pointed at the apex, superior; style 2.5 cm long, glabrous and very slender, similar to the filaments in color; stigmatic portion of a setaceously pointed termination of the style proper, twisted and curved, the stigma arranged along the side.

Type specimen number 10722, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Mindanao, May, 1909.

Gathered in moist rich humus covered soil of a densely wooded flat at 3750 feet altitude, along the north side trail of the Baruring river. My field label gives "Pamagtuigan" as the Bagobo vernacular name.

Hypoestes sibulanensis Elm. n. sp.

A sprawling or subscandent suffrutescent perennial; stems few from the same root cluster, green, terete, smooth, 7.5 mm thick or thinner, sparingly branched below, freely branched above the middle, 3 to 4 m high or long, the slender and lax branches reclining or drooping; roots many, long, fibrous, only loosely attached to the soil. Leaves from the joints and widely scattering, in very unequal opposite pairs or alternate and bract opposed, descending, flat or only the slender acuminate or caudate tips recurved, deep dull green above, paler beneath, thinly coriaceous, glabrous above, very finely puberulent beneath, curing grayish green on both sides, obtuse and rounded at the inequilateral base, the smaller ones broadly lanceolate, the others ovately oblong, 1.5 dm long by 4 cm wide at the middle or just below it, the average smaller ones less than one half as large, reticulated; midvein brown and glabrous beneath, the 5 to 7 lateral pairs rather faint and much ascending; petiole 3 to 5 mm long, ciliate along the grooved edges. Inflorescence erect, terminal, 5 cm long or less; main peduncle 3 cm long, strict, puberulent, ashy brown when dry, solitary or with a much shorter lateral pair; branches relatively very short, opposite, subtended by sharply pointed linear bracts; flowers odorless, usually in small clusters or in pairs at the ends of the branchlets, subsessile, erect, subtended by a pair of foliaceous bracts; bract 6 mm long, 2.5 mm wide, broadly obtuse, oblong, veiny, glabrous; calyx greenish, 6 mm long, cylindric, glabrous except the scabrous margins of the 5 setaceously acuminate 3 mm long segments; corolla white or light creamy white, nearly 3 cm long, the basal one half tubular and scabrously pubescent along the striae, broadly bilobed, the lower lobe narrower and a trifle shorter, the upper one 1.5 cm long, both elliptic or the upper one ovately so in shape; stamens 2 or probably more; filaments compressed, inserted at the beginning of the tube, finely ciliate along one side; style very slender and terete, glabrous, equalling the corolla; ovary elongated, 2 mm long, glabrous, subtended at the base by a glabrous cupular rim or disk, subterete.

Type specimen number 11152, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Among tickets of damp rocky soil upon a steep wooded ravine along a streamlet near the Sibulan river at 1750 feet altitude. "Rass-rass" is the vernacular or Bagobo name.

4 **Lepidagathis specifer Elm.** n. sp.

Erect herbs, usually few to several stemmed; stems occasionally solitary, frequently divided from near the base, sparingly branched from above the middle, 1 to 3 dm high, 3 to 5 mm thick, glabrate, castaneus though with green ridges, more or less crooked and bent at the base; roots copious, fibrous and often somewhat fleshy. Leaves diverse in size, horizontally spreading or ascending, membranous, nearly flat, much lighter green beneath even in the dry state, edges entire, glabrous but the nether side covered with minute cystoliths, opposite, apex obtuse to acute, base usually obtuse or subcuneate, the average blades 7 cm long and 2.75 cm wide across the middle or a trifle below it, oblong or ovately oblong, the small bract-like ones linear to lanceolate; midrib very evident beneath, brownish, the 5 to 7 ascendingly curved lateral nerves much less conspicuous beneath but relatively more evident from the upper side, the few reticulations obsolete; petiole 5 mm long or less, pulverulent. Flowers sessile, subsecund, suberect, subtended by 3 ascending bracts; the lower bract 3.5 mm long and 1 mm wide, chartaceous, truncate at the base, slenderly pointed toward the apex, broadly lanceolate, conduplicate upon the upper glabrous surface, keeled, the margins along the lower side finely hispid, the lateral bracts smaller; calyx 4 mm long, united around the base, the upper two thirds usually divided into 4 or occasionally 5 segments, all chartaceous, keeled, slenderly pointed, finely hispid along the margin beneath and along the point, the outer segment usually large and its point recurved; corolla veiny, whitish especially toward the base or below the middle, delicate, caducous, 4.5 mm long, more or less constricted at the middle, inflated below it, segmented and spreading above it, glabrous; segments 4, broad and blunt, 1.5 mm long; stamens of an equal number, inserted 0.5 mm below the throat, barely exerted; filament 0.5 to 0.75 mm long, erect, usually hairy along the inner side; anthers 0.5 mm long, subcompressed, oblong, notched at the base, basifixed; ovary glabrous, 1 mm long, ovoidly ellipsoid, with a slender glabrous 2 mm long style; stigma slightly enlarged.

Type specimen number 13383, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Found in wet sandy nooks of densely shady places along the Catangan creek at 1250 feet above ocean level. The native or Manobo name is "Malitogo."

As to our Philippine species it is nearest related to *Lepidagathis glabra Merr.*

ſ **Staurogyne ciliata Elm.** n. sp.

Low and somewhat succulent herbs, solitary or in small clusters; stem glabrous when old, 1 to 3 dm high or less, 5 mm thick, branched above the middle, strongly curved toward the base, terete but striate; roots fibrous and ample; branches few to several, mostly toward the top, ascending, umbrinus pulverulent. Leaves opposite, thinly coriaceous, much paler green beneath even in the dry state, deep green above when fresh, the larger ones horizontal or descending, flat, margins rugose but entire, exceedingly diverse in size, lanceolate, the smaller or bract-like lamina linear, the basal or larger ones much exceeding the terminal ones in length, the larger ones 8 cm long by nearly 2 cm wide below the middle, glabrous except the nerves on the nether side, acute at the apex and obtuse at the base; petiole 5 mm long or less, grooved along the upper side, umbrinus puberulent or hirsutulose; midnerve dirty brown and very evident on the lower side, scurfy or puberulent, with 5 to 8 ascendingly curved lateral nerves, cross veins or reticulations none or very obscure; flowers ascending and odorless; pedicel slender, 4 mm long, brown pubescent, subtended by a linear green bract which is equally as long and nearly glabrous, bearing a pair of unequal bracts 1 mm below the distal end; the shorter of these is 3 mm long, the longer twice as long, both seta-like, sparingly strigose; calyx 5-segmented, green, united at the very base, linear lanceolate or setaceous, unequal in length and somewhat in width, the longer one 1 cm, provided with divaricate hairs; corolla white, 1 cm long, the basal one half tubular, the upper portion subinflated, glabrous, crowned with 5 rather broad and blunt divaricately spreading segments; stamens 4 or possibly 5, slightly unequal, included; filaments inserted upon the corolla below the middle, 4 mm long, inwardly curved at the distal end, glabrous below the middle, otherwise strigose; anthers 1 mm broad, less in length, subbasifixed, apparently broadly lobed at the base; ovary 1.75 mm long, subcylindric, glabrous; style 5 mm long, slender, also lobed, the broad disk more or less strigulose.

Type specimen number 13843, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

In compact humus covered soil of a steep wooded slope along the trail toward the summit of Cawilanan peak at 4500 feet altitude. "Sagbot" in Manobo.

Apparently distinct from *Merrill's* number 5063 which the late *C. B. Clarke* determined as *Staurogyne debilis* (*Andr.*)

Clk. Leaves of ours are narrower, more tapering and with the calyx segments ciliate.

Strobilanthus antonii Elm. n. sp.

Suffrutescent undershrubs; woody tissues soft, sappy white, odorless and tasteless; bark very smooth, dull green, lighter green beneath the epidermis, the inner side the color of the wood; stems few from the same cluster, 3 m high, 5 to 8 cm thick, branched from below the middle; the branches widely spreading and curvingly recurved; the green glabrous twigs turning nearly black while drying, descending or drooping, slender, nodulose. Leaves horizontally spreading, flat, submembranous, much paler green beneath, curing equally blackish brown on both sides, very unequal in size, opposite, glabrous, with cystoliths on both surfaces, the lower or large blades 2 dm long by 6.5 cm wide at the middle, oblong, apex acutely caudate, base cuneate except those of the smaller blades which are obtuse, margins from below the middle to the apex apiculately dentate, basal one third entire; midrib pronounced beneath, glabrous, with 5 to 8 ascending lateral pairs, cross bars faint though quite evident from beneath; longer petioles 3 to 4 cm in length, glabrous, shallowly grooved along the upper side, those of the smaller or ovately oblong lamina only 5 mm long; flowers subtended by about 3 bracts, ascending, broadly lanceolate, slenderly pointed, 1.5 cm long by 5 mm wide below the middle, parallel veined, glabrous upon the upper folded surface, hirsute along the margins on the back and along the point; calyx segments 4 or 5, slightly unequal, 1 to 1.5 cm long, lanceolate, few parallel veined, hairy along the edges and apical point, glabrous toward the base, more or less folded upon the upper side especially toward the slender point; corolla 3 to 4 cm long, the basal 7.5 mm constricted, erect, otherwise inflated, ascendingly curved, 3 cm wide across the top, caducous, 4-segmented, glabrous; segments white, when old or in the early state violaceus tinged, a trifle unequal, throat obscurely oblique, 5 mm long, 7.5 mm broad, marginal portion undulate or rugose; stamens 4, inserted below the middle along the upper side of the corolla tube, ascending, of 2 unequal opposite pairs; filaments compressed, gradually tapering from the base, crisply hairy along the inner side, the shorter ones 2.5 mm long, the accompanying pair twice as long; anther basifixed, when spread out cordately lobed at the base, apex rounded, 2.5 mm long, nearly as broad at the base; style slender, 2 to 3 cm long, hirsute, provided with hairs along the inner side toward the distal end; stigma apparently of few short digitate lobes; ovary 5 to 6 mm long, elongated and ellipsoid, subcompressed, 2 mm thick, glabrous except the tufted apical portion.

Type specimen number 13610, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Gathered in wet stony ground of a very humid depression at 3500 feet altitude and right at the base of Cawilanan peak. It was nowhere else seen. "Tayungung" is the Manobo vernacular name. Very pretty in its natural state and in its native place, and is here named for our son *Anton D. Elmer.*

Somewhat related to *Strobilanthus pachys Clk.* in herbarium Kew. Our leaves are more membranous not coriaceous.

ARALIACEAE

7

Arthrophyllum pulgarense Elm. n. sp.

Shrubby; stem branches at least 1 cm thick, glabrous. Leaves alternatingly clustered toward the ends of the thick branchlets, the upper ones ascending, those farther down horizontal, 2 dm long, imparipinnate, 9 to 11-foliate; petiole thick, glabrous, terete, ater when dry, at the base expanded and partly extended around the stem, the rachis very similar; leaflets evenly scattered, about 1.5 cm apart, rigidly coriaceous, similarly spreading, dirty brown beneath, somewhat lighter brown on the upper more or less shining surface, the entire margins recurved upon the nether side when dry, the basal leaflets a trifle shorter and orbicular, the terminal ones rotund, folded, the short acute apex of the larger blades very strongly recurved, base rounded or more obtuse in the rotund leaflets, the average ones 4 cm long by 2.5 cm wide across the middle, frequently appearing a trifle inequilateral; midrib raised beneath, sunken above; lateral nerves usually of 3 pairs, very obscure though equally evident from both sides, very strongly and ascendingly curved, reticulations none; petiolule 4 to 5 mm long, stout, also glabrous and when dry similar in color. Inflorescence terminal, erect or nearly so, severally stalked from about the same place or densely crowded in an alternating manner, 9 to 13 cm long, subtended by reduced leaves; the stalks or peduncles provided at the middle by a pair of leaflets, subterete, thick, when dry dull brown or blackish, entirely glabrous, umbellately branched toward the top; branches severally clustered, the lower ones subtended by reduced leaflets, 2 cm long, ascending, similar in color, stout, longitudinally fluted, bearing umbels of flowers at their ends; pedicels very thick, 6 mm long, 3.5 mm across the truncate or minutely 5-apiculate top, the basal one half as calyx proper, turbinate and more or less 5-angular, the pedicel portion thick and striate, pulverulent or dirty puberulent; corolla forming a conical hood over the sex organs, glabrous, very early falling, coriaceous, valvate in the bud state; segments 5, broadest toward or at the base, 3 mm long and nearly 2 mm wide though slightly unequal in width, apex obtuse and tip thickened and inwardly curved; stamens as many as petals and apparently alternating with them; filaments inserted between the ovary and calyx rim, incurved under the corolla, finally spreading, 4 mm long, glabrate and terete, a trifle thicker toward the base, recurved toward the distal end; anther much recurved, attached on the back below the middle or toward the somewhat thickened base, oblongish, 1.5 mm long, dehiscing longitudinally; ovary completely imbedded, flat and radially marked with ridges at the top, bearing in the middle a sessile or subsessile stigma.

Type specimen number 13193, *A. D. E. Elmer*, Puerto Princesa (Mt. Pulgar), Palawan, May, 1911.

Collected in the chaparral formation on the rocky summit of mount Pulgar at 4000 feet altitude. Forestry Bureau number 3884 collected by *Mr. Curran* on the same mountain has ovoidly compressed fruits 7.5 mm long. Bureau of Science number 563 gathered in the same place by *Dr. Foxworthy* has reddish brown scurfy calyx and pedicels.

Related to and possibly the same as *Arthrophyllum ovalifolium Jungh.*

BEGONIACEAE

Begonia camiguinensis Elm. n. sp.

Scattering clumps; stem subterete, reddish, succulent, curved, occasionally short branched; roots long and fibrous. Petioles alternating, chiefly toward the ends of the stems or stem branches, glabrous, erect or suberect, terete, also succulent, green to reddish, varying from 1 to 2 dm long, curing dark brown, subtended by bracts; bracts elongated, acuminate, 1.5 cm long, brown when dry, glabrate; blades horizontal or descending, paler green beneath, glabrous on both sides, grayish white punctate beneath, curing dull green, inequilateral, ovate in general outline, oblique and deeply cordate at the base, apex gradually tapering into a sharply acute to acuminate point, the broader side broadly rounded at the lower end, the average ones 1.5 dm long by 1 dm wide a trifle below the middle or the widest portion, margins entire in the basal sinus, otherwise obscurely wavy or coarsely dentate, the edges reddish tinged, coriaceous; veins 7, all radiating, much darker brown beneath when dry, the main one extending into the apex and with 1 to 3 faint lateral pairs, the others merely once or twice forked on the lower side toward the distal end or above the middle, reticulations scarcely evident from the upper side. Peduncles considerably longer than the petioles, similarly colored and glabrate, subtended by stipule-like bracts, branched toward the top; branches distichously branched from the base, the internodes averaging 2 cm apart, a trifle enlarged at the point of branching, glabrous and shining, striate; flowers alternatingly scattered along the fine ultimate slender branches, odorless, white and tinged with red or pink but anthers bright yellow; flower pedicel 3 mm long, filiform, subtended by bract vestiges; perianth composed of 2 distinctly different pairs of segments, decussately arranged; the outer pair erect and in the bud state enclosing the loose cluster of stamens, spreading and shriveling after bloom, ovate, relatively few veined, hyaline, 6 mm long and 5 mm wide below the middle, connate at or toward the base, broadly obtuse at the apex; the inner pair at right angles to the outer pair, more distinctly hyaline, obovately elongated, 4 mm long, 2.5 mm wide above the middle, rounded at the apex; stamens many, upon an elongated cluster 5 mm in length, light yellow even when dry; filaments averaging 1 mm long, glabrous, hyaline; anthers compressed, at least 0.75 mm long, 0.5 mm wide across the rounded base and only obscurely notched at the apex, basifixed, dehiscing along the edges; young capsule with stigmas persistent; style short, glabrous, 3 parted toward the top, subtended at the base by 3 unequal membranous lobes; stigmas 2-lobed, each lobe as long as the style, much curved and pulverulent or short ciliate. Capsule with wings 0.75 cm high and 1.5 cm across, glabrous, straw brown; larger wing 5 mm wide at the middle, the other 2 a trifle narrower, all tapering from both ends toward the obtuse middle point; seed portion elliptic.

Type specimen number 14222, *A. D. E. Elmer,* Mambajao, Island of Camiguin, Mindanao, November, 1912.

In loose soil among stones of a steep wooded incline at 1750 feet altitude.

Not *Begonia gitingensis Elm.* nor *Begonia mindorensis Merr.*, because capsule wings are not so broadly rounded, leaf margins less entire, veins and petioles glabrous or nearly so.

Begonia elegans Elm. n. sp.

A creeping, sprawling and climbing perennial; stem succulent, greenish, terete, glabrous, when old covered with a smoothish yellowish gray epidermis, less than an ordinary lead pencil in thickness, repeatedly branched and forming quite densely interlaced masses along its support, turning light to dark brown when dry; main branches alternatingly rebranched from near the base, the ultimate ones rather slender, glabrous and somewhat compressed. Leaves alternating, well scattered along all the branchlets, descending, thinly coriaceous, flat, shining deep velvety green as are also the under sides, curing greenish on both sides, glabrous, base obtuse to broadly rounded, inequilateral, abruptly acuminate above the middle, margins entire around the base, otherwise ciliately apiculate or the broader side terminating into a broad tooth or an obscure lobule , diverse in size, the average lamina 3.5 cm long by 1.5 cm wide below the middle, ovate in general outline or broadly short lanceolate, very numerous; petiole 1 to 2 cm long, strict, very slender and glabrous, sappy white, at the base provided with a pair of 5 mm long elongated brown and glabrous stipular bracts; veins 3 or 4, the middle one extending into the apex, the one on the narrower side extending to above the middle of the blade, the upper lateral one on the broader side extending into the side tooth or lobule and usually is branched from the middle, the basal one on the broader side quite short and near the edge of the leaf. Flowers terminal or from the uppermost leaf axils, few clustered, 1 to 3 cm long; peduncle proper varying from one to two thirds the entire length, subtended at the base by reduced leaves or by the brown stipular bracts; pedicels also very slender or thread-like, averaging 5 mm in length, subtended by brown subpersistent bracteoles; staminate flower enclosed and subtended by a single pair of perianth segments; lobes 4.5 mm long and wide, orbicular or nearly so, shallowly cordate at the base, hyaline, severally veined, pink to white; stamens many, reddish brown, forming a loose 4 mm thick mass; filaments unequal, less than 1 mm in length, glabrous and of the same color; anthers 0.66 mm long, 0.5 mm wide, compressed, basifixed, broadly rounded and distinctly emarginate at the apex, elliptic to obovately elliptic, dehiscing along the edges from the apex toward the base; pistillate flowers not observed. Capsule with the wings 1 cm high and nearly twice as broad across the truncate apex, broadly rounded at the base, the larger wings unequal, the lateral ones much smaller, the seed containing portion elliptic, all wings transversely veined, the 3 placenta strands sparsely ciliate.

Type specimen number 13672, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered this elegant *Begonia* in compact well drained soil of a steep forested ravine at 4250 feet height of Cawilanan peak. "Bonogbonog" is its Manobo name. In this altitudinal region it was seen quite often climbing up to three to five feet along small dead stems and along the rough stems of living tree ferns.

Its greatest affinity is with *Begonia lagunensis Elm.* yet sufficiently distinct in a number of minor details of the flowers, bracts and leaves.

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Begonia peltata Elm. n. sp.

Small or larger tufts; stem with fibrous roots, 1.25 cm thick, curved, short, seldom branched, herbaceous, succulent, deep red, horizontal or only tips ascending. Leaves alternatingly crowded at the ends of the stem; petiole ascending, similarly colored, soft, terete, varying from 1 to 2 dm long, densely fulvus hairy, sour, blackish brown when dry; the subtending bracts 1 to 1.5 cm long, broadly oblong, roughened but glabrous, rigidly coriaceous, at the apex few ciliate or only the mucronate point ciliated, subpersistent; blades descending, leathery, much paler green beneath, exceedingly diverse in size but not in shape, ovately rotund or rotund, apex with a short rather sharp point, entire, glabrous except the veins on the nether side, peltate, the larger on our specimen 23 cm long by 17 cm wide, the smaller ones 8 cm long by 5.5 cm wide, drying similarly reddish brown on both sides, dark green and shining on the upper side, minutely punctate on both surfaces; veins 7 to 9, radiating from the end of the petiole a trifle below the middle of the blade, the upper or strongest one extending into the apex and with 2 to 3 faint lateral pairs, all the other veins from 1 to 3-forked, reticulations coarse and quite evident on the upper side only, the veins and forks hispid in the early state especially on the lower side, ultimately glabrate, much darker brown in the dry state. Peduncle ascending from the uppermost leaf axils, glabrous, subterete, exceeding the leaves, branched at the top; branches distichously rebranched from the base, glabrous, straw brown when dry, striate and subangular, a trifle thickened at the point of branching, all the branchlets as well as fruiting pedicels average 2 cm in length; flowering pedicel only one half as long, very slender, subtended by bract vestiges; flowers subpendant, also subtended by bracts, light pink, anthers light yellow; perianth of staminate flowers orbicular and with a shallow cordate base, 1 cm long and wide, at first erect and clasping the stamens, ultimately spreading, very membranous and veiny, connate at the base, the edges in the young state contiguous; stamens rather numerous, forming a loose subglobose mass 5 mm in diameter; filaments glabrous, very pale yellow, varying from 1.5 to 2 mm long, filiform; anther basifixed, obcuneate or truncately short clavate, 1 mm long by 0.75 mm wide across the obscurely emarginate apex, obtuse at the base, deeper yellow than the filaments; pistillate flower absent. Capsule 1.5 cm high or higher, 2 to 2.75 cm wide across the truncate apex including the wings, broadly rounded at the base though the broader wing extending a trifle farther down, upper and outer points rounded; the narrower wing 0.75 cm wide, the wider 1.25 cm, chartaceous, brown, glabrous and shining, transversely nerved, the lateral wing crescent in shape; seed portion ovately elliptic, also glabrous, the 3 stigmas frequently persistent, the basel end within 1 to 3 mm above the lower edge of the wings.

Type specimen number 14183, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered around the lower side of high cliffs along the western side of the densely wooded Catangan creek ravine at 3500 feet altitude. The Manobo name is "Sappat."

This is the only species with peltate leaves in the Philippines.

10 **Begonia sordidissima Elm. n. sp.**

Succulent tufts; stem 1.25 cm thick, creeping or trailing, sparingly branched, greenish or badius brown, crooked and curved and forming more or less interlaced masses, irregularly nodulose, with numerous long fibrous roots. Leaves crowded toward the ends of the stem branches, alternate, erect or suberect; petiole similar in color, terete, fuligineus pubescent, varying from 1.5 to 2.5 dm long, slightly thickened toward the base, subtended by brown oblong bracts which are similarly hairy especially on the ventral side; blades coriaceous, descending or turned and twisted so as to secure the most of light, flat, parisius green above, much paler beneath, sordid or dirty brown when dry especially the upper side, glabrous except the veins and nerves beneath, oblique or inequilateral, cordately ovate in outline, gradually tapering toward the sharply pointed tip, margins entire but with obscure broad teeth or merely undulate, the lower end below the base broadly rounded, the larger dry lamina 14 cm long and one half as wide across the base; veins 7, radially spreading from or near the base, the middle one extending into the apex and 1 to 3-branched from the middle along the upper or wider side, the other middle veins likewise few branched, fuligineus brown when dry and with similarly colored hairs, in the fresh state occasionally reddish tinged, coarse reticulations obscure and only sparsely hairy. Peduncle arising from the leaf axils, succulent, latericius, usually exceeding the foliage, sparsely hirsute, it as well as the petioles turning dull brown when dry, fastigiately branched toward the top, the branched portion about 1 dm in length; branchlets glabrate, drying straw brown, numerously rebranched above the middle, subterete, thickened at the joints and appearing somewhat zigzag; pedicel of the flowers 4 mm long, subtended by a pair of unequal membranous petaloid and caducous bracts, twice as long in the fruiting state; buds pink; flower whitish except the yellow anthers, odorless, terminating the ultimate branchlets; perianth of the staminate flowers membranous, divaricately spreading; the outer pair of lamina 5 to 6 mm long, erect and enclosing the stamens, ultimately spreading, broadly or bluntly elliptic, more or less veiny, almost 4 mm wide, rounded at the apex, base connate; the inner pair at right angles with the outher pair, obovately oblong, hyaline, 4 mm long by 1.5 mm wide, also rounded at the apex and connate at the base, similarly spreading, both pairs subtending a soft globose stamineal head 3 mm in diameter; filaments hyaline, only a fractional of 1 mm in length; anther light yellow, obcuneate, 0.75 mm long, 0.5 mm wide across the truncate and minutely emarginate apex, basifixed, dehiscing along the edges from the apex toward the base; pistillate flowers not seen. Capsule at most 1.5 cm wide including the wings, 1 cm high; the wings green, glabrous, transversely veined, widest at the middle, gradually rounded toward both ends, 3 to 5 mm wide across the widest portion; seed portion elliptic, 2-celled; seeds very numerous, minute, brown, enclosed in a similarly colored membrane extending along the axial placenta.

Type specimen number 13575, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Tufted and more or less in colonies of damp loose earth deeply covered with humus or spreading over humus covered rocks and bowlders lying well sunken in the ground of dense forested ravines at 750 feet above ocean level. "Calohoglohog" in the Manobo dialect.

Not *Begonia gitingensis Elm.* nor *Begonia calcicola Merr.* Also manifestly allied to *Begonia luzonensis Warb.* and to *Begonia manillensis DC.*

Begonia urdanetensis Elm. n. sp.

Bi or perennial herbs; stems numerous from the same root cluster, terete, as thick as ordinary lead pencils, reclining and quite rigid at the base, 3 to 9 dm long or even longer, reddish brown, usually branched, fusiformly swollen at the joints, blackish brown when dry and striate, coarsely hispid toward the top; branchlets few, ascending, rather short though similar in color, their distal ends densely reddish brown scurfy; roots profuse, rigid. Leaves horizontal or descending especially toward the tips, very rugose and quite rigid or chartaceous, dark green above, much paler green beneath, alternating though frequently with opposite short branches, short brown hispid on both sides, inequilateral, very irregular in shape though usually broadest above, base obliquely rounded, apex slenderly pointed, the narrower edge straight and entire especially toward the base, the broader side subentire toward the base but otherwise obscurely and irregularly toothed, with 1 to 3 broad teeth or tooth-like lobes at the upper end of the broader side, the real apical portion irregularly toothed along its edges, curing unequally brown on the sides, the average ones 8 cm long by one half as wide across the widest portion; midrib nearly straight from the base to the apex, quite prominent and densely fuligineus scurfy beneath, with a pair of lateral nerves arising a few mm above the base and extending almost to the middle of the blade; the other lateral nerves 3 to 5 and alternating, the lower one from below the middle of the blade, much ascending, nearly straight, few branched toward their ends, the main ones terminating into the larger teeth, reticulation coarse and very obscure; petioles 5 mm long or nearly twice as long in the lower or old ones, scurfy brown; stipular bracts very pale or yellowish green, brown when dry, 1 to 1.5 cm long, caducous, oblong and mucronately pointed. Flowers opposite the uppermost leaves; stalk 5 mm long in the fruiting state, subtended by similar bracts, bearing 1 to 3 flowers toward the distal ends; pedicels angular, when old 7.5 mm long, glabrous when old, straw brown, striate, articulate at the base and subtended by caducous bracteoles; segments of staminate flowers 2, broadly ovate and erect in the bud state, ultimately spreading and exposing the stamens, shallowly cordate at the base, 6 mm long and 6 mm wide toward the base, hyaline and with a shade of red; staminate cluster yellowish, elongated, 5 mm in length, with 15 to 20 stamens; filament at most 1 mm long, reddish brown, glabrous; anthers 1.33 mm long, 0.66 mm wide, compressed, oblong, also reddish brown, rounded at the apex and occasionally indented, base obtuse, cells opening along the edges; styles 3, deep brown and flattened, glabrous, 1.5 mm long, united at the base; stigma forked; each fork as long as the style and also compressed, much curved and twisted, the pulverulent stigmatic edge deeper reddish brown; the style subtended by a whorl of 3 nearly equal perianth lobes; the lobes elliptic, 5 mm long, 4.5 mm wide, glabrous, membranous, few veined, united at the base, remaining cup shaped. Capsule 1 cm long, 1.25 cm wide across the truncate apex, 3-winged, usually a trifle oblique at the narrower and rounded base; wings transversely nerved, 4 mm wide at the top or at their widest portion, green, dry, glabrous, the upper outer point rounded; seed portion elliptic, crisply brown hairy, terminated in a blunt brown point.

Type specimen number 13819, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Inhabiting black very wet humus covered alluvial soil of jungled woods about the lower border of lake Danao at 5000 feet altitude. This very rare species was called "Madamo" by the Manobos.

Distantly related to *Begonia incisa DC.* and *Begonia quercifolia Merr.*

BIGNONIACEAE

Radermachera elmeri fragrans Elm. n. var.

Suberect tree; stem ascending, 4.5 dm thick, 12 m high or higher, crooked; main branches erect, arising from above the middle, ultimately numerously rebranched and forming dense masses; wood moderately hard and burly, bitter, slightly fetid, whitish; bark quite thick, brown on the stem, gray on the branches, greenish except the epidermis which flakes in small pieces; branchlets yellowish and brown lenticelled, the young apical portions green and glabrous. Leaves opposite, ascending, spreading, ternately compound, all the stalks green except the more or less swollen purplish joints, varying from 3 to 8 dm long; leaflets flat, coriaceous, smooth and glabrous, subcoriaceous, much darker green on the upper side, grayish brown on both sides when dry, variable in size from 6 to 15 cm long and 2.5 to 5 cm wide across the middle, elliptic but with abruptly acuminate to caudate and strongly recurved points, base obtuse to cuneate, entire; petiolules 1 cm long or considerably shorter, caniculate, appearing articulate or glandularly swollen at their distal ends, the terminal one or when solitary much longer; midrib sunken along the upper side, rather conspicuous beneath; lateral pairs 7 to 9, divaricate, faint, tips reticulately united, reticulations evident under a hand lens. Panicle as long as the leaves, terminal, ascending, glabrous, green except the sweetly fragrant flowers;

pedicels 1 cm long and usually provided toward the base by one or more very minute bracts; calyx stipitate toward the green base and at the base falsely articulate, whitish above the middle, 2 cm long and 1.5 cm wide across the irregularly short lobed top, turbinate, greenish toward the base where it seems to separate transversely when mature, the lobed portion thinner in texture and whitish; corolla 5 to 7 cm long, glabrous except the minutely puberulent upper portion, 5 cm wide across the throat, the basal 1 cm constricted and 6 mm wide, otherwise campanulate and finely veined, pendant, caducous, light creamy white except the yellowish red inner side, somewhat compressed; the 5 lobes average 1.5 cm long and as wide across the base, broadly rounded around the apex; stamens 4, included, of 2 slightly unequal pairs; filaments nearly white, inserted upon the throat of the constricted portion of the corolla or 1 cm from the base, the shorter pair at least 2 cm long, the longer pair almost 1 cm longer, gracefully curved toward each other, all toward the base flattened and glandularly hairy along the upper side, otherwise slender and glabrous; anthers similar to a spear head when in anthesis, brownish tinged, 4 mm long, the apical point blunt and membranous, attached at the distal angle of the divergent cells, laterally dehiscent; ovary green.

Type specimen number 12681, *A. D. E. Elmer*, Brooks Point (Addison Peak), Palawan, February, 1911.

Found in wet black soil near a wooded swamp along the sea shore and about 25 feet above its level. The natives or Tagbanuas call it "Tantangan."

In the field it did not remind me of the type which I collected years ago in northern Luzon. Flowers not pink nor inflorescence pendantly elongated. *Dr. Foxworthy* also reports our Palawan specimens as being fragrant.

BORAGINACEAE

13 **Trigonotis apoensis Elm.** n. sp.

Biennial patches; stems somewhat succulent, creeping, ultimately erect, glabrous or nearly so, black when dry and frequently covered with a whitish coat; the old ones prostrate and densely rooted from the closely set joints, crooked and angular, the joints provided with 1.5 cm long lanceolate and acuminately pointed bracts, at the distal end provided with an erect tuft of leaves and usually provided with one or more slender runners or new stems; the new stem also prostrate, much slenderer and longer, leaf bearing from the few joints above the middle and likewise provided with relatively few roots; roots profuse especially toward the base of the old stems, fibrous. Leaves alternate, scattered along the runners or new stems, tufted at the distal end of the old or leafless stem, ascending or horizontally spreading, limp or coriaceous, deep green above, much paler on the nether side, flat, margins entire, occasionally slightly undulate, obtusely rounded toward the apex and terminated by a short fine point, base mostly rounded, narrowly elliptic or broadly oblong, curing unequally brown on their sides, the larger lamina 6 cm long and one half as wide across the middle or just a trifle below it, usually however smaller and some of them much smaller, sprinkled on both sides with very appressed chalky white short hairs; midrib more densely chalky white strigose beneath, faint on both sides, lateral nerves obsolete or very obscurely 3 to 5 on each side; petioles varying from 2 to 8 cm in length, flat or its sides margined, gradually expanded toward the base and clasping the stem, grayish strigose especially along the edges, green when fresh, ultimately breaking a few cm from the base, the remaining persistent portion withering and becoming bract-like. Inflorescence arising from the uppermost leaf axils, exceeding the foliage, 5 to 8 cm long when the first flowers evolve; the slender peduncle yellowish short pubescent, elongated and subglabrate in the fruiting state and occasionally with a foliaceous bract toward the base or below the middle; flowers clustered toward the curved top; pedicel 3 to 4 mm long, minutely strigose, the upper ones at least subtended by foliaceous bracts; bract elliptic though with an acute apex, 5 mm long by one half as wide at the middle, veiny and similarly strigose; calyx persistent, 4 mm long and fully as wide across the spreading top, turbinate, united below the middle, the balance 5-toothed; segments ovately triangular, similarly veined as the bracts, sparsely strigose, slightly unequal and a trifle overlapping toward the base. Fruiting disk imbedded, dark brown and glabrous, 1.25 mm across the edges, occasionally rugose, in the center bearing a 1.5 mm long slender style terminated by a minute stigma; seeds normally 4, triquetrous, 1.25 mm across, bony, smooth, very deep brown; corolla membranous, 3.5 mm long, obovoid in the bud state and strongly imbricate, the basal one half broadly tubular, glabrous; segments 5, elliptic or short obovate, 1.5 mm long, deeply concave on the ventral side, at the base on the inner side provided with a short broadened gland; stamens as many as corolla segments and alternating with them, barely exerted; filament less than 0.5 mm long, subhyaline, also glabrous; anther introrse, 0.75 mm long, oblong, attached to the back below the middle, longitudinally dehiscent; ovary superior, compressed, about 4-rugose; style 1 mm long, likewise glabrous, terminated by a slightly enlarged stigma.

Type specimen number 11500, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Discovered in moist fertile humus covered soil of wooded banks along the Cati creek at 5750 feet altitude on the northeastern section of mount Apo. Named "Salimbangade" by the Bagobos.

Distinct from the northern Luzon *Trigonotis philippinensis Merr.* yet not so certain as to the right genus.

BURSERACEAE

Canarium agusanense Elm. n. sp.

Only a small burly tree; stem 1.5 dm thick, crooked, terete, 8 m high, mainly branched toward the top; wood moderately soft, whitish, of a faint turpentine taste or odor; bark yellowish gray, smooth or scaly; main branches crookedly branched; twigs relatively short yellowish, covered with minute scurfy scales, roughened with darker brown rather prominently raised lenticels. Leaves alternating, clustered toward the ends of the branchlets, ascending or horizontal, chartaceous, 2 to 3 dm long; leaflets 3 to 5-foliate, elliptic to ovately elliptic or the larger ones elliptically elongated, imparipinnate, apex rounded or short acute, very shining on both sides, the basal pair smallest, broadly rounded at the base and occasionally a trifle inequilateral, edges entire and subinvolute in the dry state at least, the larger blades 12 cm long by 7 cm wide at the middle, paler green beneath and brown when dry, with a similarly colored pubescence or subcinereous; petiole 5 to cm 8 cm long, terete, strict, scurfy brown, obscurely striate, thickened at the base and leaving large scars after falling, the rachis very similar and well expended beyond the upper pair of leaflets; petiolule 5 to 8 mm in length, short fulvus tomentose, obscurely angled along the lower and grooved along the upper side; midrib prominently raised beneath and grooveed above; lateral nerves 11 to 14 pairs, also prominent beneath and similarly pubescent, impressed and glabrous on the upper side, divaricate, tips strongly ascending; cross bars with reticulations relatively prominent beneath, likewise soft pubescent; stipule prong-like, fulvus pubescent and more or less striate, 5 to 8 mm long, curved about the stem. Spicate inflorescence usually from the lower leaf axils, 5 to 10 cm long, stout, angular or striate, flower bearing from near the base, fulvus scurfy or pubescent, greenish in the fresh state, dark or dull brown when dry; flowers apparently easily falling, rigid, odorless, sessile, yellowish, subtended by bracteoles; calyx sessile, 4 mm long, 3.5 mm thick, triangular, short velvety pubescent or densely puberulent on the exterior, thickly coriaceous, terminated by obtuse teeth; corolla 3-segmented, obovately oblong, imbricate in the slightly angular bud state, puberulent on the exterior except toward the narrowed glabrous base, the apical portion broadly obtuse and somewhat thickened, 3.5 mm wide, 9 mm long; stamens 5, inserted about the basal portion of the ovary, included; filaments flattened and widest at the contiguous base, glabrous, about 4 mm long, very slender toward the distal end; anther 2 mm long by at least 0.75 mm wide, compressed, basifixed, rounded at the apex, truncately rounded at the base, dehiscing along the edges; ovary 2 mm across, subtruncate and sparsely ciliate at the apex, roughened or irregularly rugose, rigid.

Type specimen number 13275, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Gathered from a forested ridge of Giwantanan knoll in compact red soil at 1250 feet altitude. "Binsauan" is the Manobo name.

Although this material is in flower only and *Canarium subvelutinum Elm.* in fruit, there are a number of minor details distinguishing one from the other. It also is closely related to *Canarium reticulatum Merr.*

15 **Canarium nervosum Elm.** Leaf. Philip. Bot. II, 428, 1908.

Spikes few, arising from the terminal portion of the twigs, ascending, green even to the calyx, varying from 1 to 2 dm long, flower bearing from near the base, the larger inflorescences very short branched at the base; rachis glabrous, blackish brown when dry, only the young tips puberulent; flowers usually clustered; pedicels thick, likewise finely pubescent, unequal in length but averaging 3 mm long, subtended by bract vestiges; calyx green, broadly cup shaped, 5 mm across, thick, puberulent on the outside, 3.5 mm high, very bluntly 3-toothed; corolla bud almost 1 cm long, flesh color except the yellowish tip, obscurely triangular, a little over one half as thick below the middle, yellowish gray puberulent on the exterior except at the base, blunt at the apex; the 3 segments valvate in the bud, ultimately separating, thickly coriaceous, oblong; stamens about 6, included; filaments stramineus, 9 mm long, inserted upon the basal portion of the corolla, linear, fleshy, compressed, strigose especially in the middle region; anther sulphureus, 3 mm long, broadly rounded at the basifixed base, bluntly obtuse at the apex, oblong though a trifle wider below the middle, introrse and sublaterally dehiscent; ovary disk rather large, bristly hairy, miniatus in color.

Represented by number 12941, *Elmer*, Puerto Princesa (Mt. Pulgar), Palawan, April, 1911.

Originally collected in Leyte, few years latter in southern Negros and only recently the first flowering specimens were collected on the island of Palawan.

16 **Canarium subvelutinum Elm.** n. sp.

Upright small tree; stem 2 to 3 dm thick, terete, nearly straight, 10 m high, chiefly branched toward the top; wood very hard, white but brownish toward the center, slightly odorous, tasteless; bark smooth or scaling in thin plates, yellowish on the surface, otherwise testaceus; main branches rather long, crooked, sparingly rebranched, the ultimate ones relatively short, terete, the young tips short scurfy brown and lenticelled. Leaves alternate and mostly toward the ends of the branchlets, 2 to 4 dm long, horizontal; petiole 6 to 10 cm long, terete and striate, short scurfy brown, greenish but avellaneus when dry, thickened at the base and leaving large circular scars after falling; stipule prong-like, 5 to 8 mm long, usually recurved around the stem, scurfy brown and obscurely striate; rachis similar to the petiole proper, extended beyond the upper pair of leaflets; lateral petiolules 1 cm long or less, ridged beneath and caniculate above, umber furfuraceous; leaflets 5 to 7-foliate, imparipinnate, terminal leaflet a trifle larger, basal pair smallest, elliptically elongated, chartaceous, descending, the sharply acute apex recurved, a little inequilateral toward the broadly rounded base, the average ones 15 cm long by 6 cm wide across the middle or a trifle below it, margins entire and subinvolute in the dry state at least, nearly flat and subglabrous on the upper side when old except along the midrib and nerves, beneath paler green and subvelutinous, curing light umbrinus beneath and grayish above; midrib yellowish when fresh, pronounced beneath and deeply grooved along the upper side, densely umber tomentose on both sides; lateral nerves yellowish when fresh, 12 to 15 pairs, divaricate but gradually ascendingly curved toward their distal ends, also prominent beneath and similarly tomentose on both sides, cross bars and fine reticulations very evident beneath, less so on the upper side. Flower not seen. Infrutescence suberect, mostly lateral and solitary from the axils of the leaf scars, 5 to 15 cm long, only sparingly short branched; stalks thick, ligneous, glabrate when old, gray when dry, angular along the fruit bearing portion; fruits alternatingly scattered or occasionally in subwhorls, ellipsoid, 1.5 cm long, dark green, glabrous, smooth and hard, drying greenish gray and becoming much wrinkled; calyx persistent, 5 mm long and 8 mm across the 3 thickened segments, the basal one half triangularly constricted, short fulvus tomentose in the early state at least;

stone seed rugosely pitted.

Type specimen number 13947, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered on a steep forested ravine on the north side of Duros peak at 3750 feet altitude. Its difficult Manobo name is "Gotcuton."

To be compared with *Canarium reticulatum Merr.* though our fruits are smaller and the calyx less pubescent.

17

Canarium urdanetense Elm. n. sp.

Immense tree; trunk 1.33 m in diameter, 25 m high, its main branches from the middle and ascending, ultimately numerously rebranched; wood hard, odorless and without taste, white and reddish tinged toward the middle region; bark brown and excrescent on the surface, the middle portion latericius, the inner side whitish; twigs numerous, ascendingly curved or suberect, grayish white and brown lenticelled, even the young tips glabrous. Leaves ascending, less than 1 dm in length; petiole 1.5 to 2 cm long, grayish and coarsely brown lenticelled, terete, comparatively thick and appearing ligneous, extended at least 1.25 cm beyond the lateral pair of leaflets, glabrous; petiolule likewise thick and grooved along the upper side, 5 mm long or less; stipule a mere vestige or obsolete; leaflets oblong or subovately oblong, deep green and shining on the upper side, the entire marginal sides curved upon the paler green lower surface, similarly brown on both sides when dry, apical end more rounded than at the base, the terminal leaflet obtuse at the base, the average blades 6 cm long and one half as wide across the middle or its widest portion; midrib exceedingly prominent beneath, broadly depressed along the upper side, glabrate; lateral nerves 9 to 12 pairs, ascending, curved toward their distal ends, also prominent beneath and depressed along the upper side, cross bars with reticulations very evident from both sides but especially from beneath. Flowering spikes 5 to 8 cm long, greenish brown, lateral or from the lower leaf axils, glabrous or rusty brown at the young portion, rather slender and few lenticelled, more or less striate in the dry state, flower bearing from near the base, usually solitary; bud of flowers sessilely inserted upon the curved and ridged portion of the stalks and terminating them, triangularly elliptic, 3 mm long, subtended by 3 unequal rigid bracts; calyx cup shaped, 2.5 mm long, 3-segmemted, pulverulent on the outside, very rigid and thick especially at the united base, persistent; bud petals valvate, coriaceous, 2 mm long, externally glabrate or puberulent toward the obtuse apex, truncate at the base, alternating with the calyx segments; stamens 5; young filaments 0.5 mm long, glabrous; anthers basifixed, truncate at the base, apex obtuse or acutely pointed, as long as the filaments, also glabrous; style short, very thick, pubescent; stigma smooth, 3-lobulate. Nuts smooth and glabrous, dark green, hard, ellipsoid or ovoidly ellipsoid, sessile, alternatingly scattered, 1.25 cm long, subtended by the subpersistent 3-segmented calyx.

Type specimen number 14074, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

This fine big tree was discovered in the lake Danao humid forested basin at 5550 feet altitude. The Manobo name is "Sagasa" or "Sagasag."

18 **Canarium villosiflora Elm.** n. sp.

Erect and a slender tree; bole 3 dm thick, 12 m high, mostly branched at the top; wood tough, quite hard, only the thin sapwood white, otherwise isabellinus and with a small fuligineus heartwood, odorless and tasteless; bark smoothish, yellowish gray except the latericius middle portion and sappy white inner side; branches spreading, sparingly rebranched, the slender branchlets ascendingly curved and 2 to 3 cm thick, light castaneus tomentose or pubescent. Leaves alternating, crowded toward the ends, mostly horizontally spreading, 4 to 6 dm long; petiole 1 to 2 dm long or about one third of the whole leaf, terete, minutely striate, fuligineus short tomentose and finally becoming glabrate, pale green but dark when dry; rachis subcompressed, more or less ridged along the upper side, similar in color and pubescence to the petiole; petiolules 5 to 8 mm long, caniculate, densely fulvus hairy; leaflets imparipinnate, 11 to 15-foliate, mainly horizontal, subchartaceous, edges entire but wrinkled or wavy, the basal ones shorter and relatively broader, the upper ones oblanceolately oblong, the middle ones more nearly oblong, the lower ones elliptic to ovately elliptic, the average oblong blades 18 cm long by 5 cm wide across the middle, apex very abruptly terminating into the very slender and sharp point, base of the upper or relatively narrower leaflets obtusely rounded and slightly obliquely inequilateral, the lower ones broadly rounded at the base, glabrous on the upper lucid dark green surface, paler green on the lower soft pubescent surface; both sides of the stipule turning about the stem, prong-like, 2 to 3 cm long, quite rigid and castaneus hairy. Flowering spikes solitary from the upper leaf axils, varying from 1.5 to 4 dm long, ascending or divaricate from the base, usually recurved toward the distal end, flower bearing from very near the base, short branched all along but especially toward the base; rachis as well as the 1 to 3 cm long lateral branches densely fuligineus, branchlets rebranched toward the distal ends; main branches as well as the few divaricate branchlets subtended by sharply pointed very caducous bracts; buds ellipsoid, 5 mm long, sessile, subtended by a broad and short densely pubescent bract; calyx 7 mm long above the middle, 3-segmented, deeply cup shaped, thickly coriaceous, densely villous on the exterior; the 3 lobes ovately oblong, broadly obtuse at the apex, erect; corolla as long, broadly tubular, 3-lobed to below the middle, coriaceous, glabrous about the base on the exterior, otherwise villous; segments oblong, valvate in the bud state, obtuse at the apex, a trifle unequal in width; stamens 6, erect, equalling the corolla in length; filaments 3 mm long, glabrous, expanded toward the base and united into a rim about the ovary, otherwise slender; anthers almost as long, linear, 1 mm wide, bluntly terminated at both ends, short obovoid and obscurely rugose, ciliate at the apex, with a sessile stigma.

Type specimen number 13644, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Standing among *Dipterocarpaceae* forests in a very humid flat at 750 feet altitude and right near Bayabas my headquarters. According to the Manobos "Sagasac" is its native name.

Protium philippinensis Elm. n. sp.

Spreading and of a medium sized tree; stem 3 dm thick, obscurely wadded, 10 m high, branched toward the top only; wood hard, burly, distinctly bitter, odorless, sapwood white, otherwise nearly roseus; bark gray, smooth or scaling in plates, testaceus except the surface; branches freely rebranched and numerous, the flexible twigs hanging, glabrous even the young green tips, the branchlets copious, horizontal or descending, the normal ones 5-foliate, the smaller ones 3-foliate, 1 to 2 dm long; peduncle one third to one half as long, subterete, minutely striate, sparsely lenticelled, slightly thickened toward the base and flat in the axil, also glabrous, dark green in the fresh state; rachis similar though more grooved on the upper side especially at the point of insertion of the petiolules; petiolules 1 to 1.5 cm long for the lateral ones, 2 cm long for the terminal leaflet, finely grooved along the upper side; leaflets subelliptic or obscurely ovately oblong, the smallest ones broadly lanceolate, acute to obtuse at the base and sometimes slightly inequilateral, gradually extending to the acute or subacuminate usually recurved apex, the average ones 8 cm long by 3 cm wide at or a trifle below the middle, brown on both sides, glabrous, shining on the upper surface; midrib ridged beneath, sunken above; lateral nerves 5 to 8, subdivaricate, comparatively faint, tips archingly united, reticulations numerous and still more obscure. Inflorescence usually arising from the terminal leaf axils, 3 to 5 cm long, ascending, green, brown when dry, short branched above the middle and puberulent; branches divaricate, less than 1 cm long, subtended by broad puberulent bracts or bract vestiges; flower greenish, clustered toward the distal end of the branchlets, they as well as the twigs have a strong turpentine odor, subsessile; calyx 2 mm long, turbinate, irregularly terete, glabrate but very minutely black spotted, very thick and rigid, obscurely 4-toothed or subentire, nearly as wide across the top as long; petals free, in the bud state valvate or only slightly overlapping, erect, coriaceous, glabrate, nearly 3 mm long, one half as wide toward the base, alternating with the calyx segments, broadest at the base, obtuse at the apex, margins involute especially toward the apex; ovary subellipsoid, puberulent, surrounded by a fleshy stamineal rim, constricted at the apex into a short thick style or stigmatic portion; stamens 8, arising from the outer basal portion of the rim, the 4 outer ones alternating with the petals and a trifle longer, the inner series opposite the petals; filaments coriaceous, compressed especially toward the base, gradually tapering from the base to the pointed apex, 1.75 mm long, nearly erect; anthers ovate, bilobed at the base and basifixed, 0.25 mm long and nearly as broad toward the base, laterally dehiscent. Fruiting pedicel thick, angular, 5 mm long, yellowish brown and glabrate, bearing at the distal end the vestiges of the subpersistent calyx; fruit 1 to 1.75 cm across, brick red or brownish red when fully mature, compressed, subglobose or very irregular, usually from 1 to 5-obscurely lobed especially in the blackish brown dry state; seeds from 1 to 4 even 5, stony, convex on the back, the inner sides nearly plane, dull yellowish brown when dry.

Type specimen numbers 12760 in flower and 13225 in fruit, *A. D. E. Elmer*, Puerto Princesa (Mt. Pulgar), Palawan, March and May respectively, 1911.

Both numbers were collected on the gravelly and wooded banks of the Iwahig river at 250 feet altitude.

There is no question that the flowering and fruiting material represent the same species, though there is some doubt as to the right genus which is chiefly South American, one species being known in Maritius, one in Madagascar and a few in Java.

CAMPANULACEAE

2 **Pentaphragma pulgarense Elm.** n. sp.

Perennial and herbaceous; stem low, seldom branched, 2 dm long, 1 cm thick, subterete, the green leaf bearing tips dirty yellowish brown scurfy or crisply hairy, taking roots along the lower side of the decumbent base, ultimately erect. Leaves few, alternating, heavily coriaceous, horizontally spreading, subavellaneus on the lower side when dry and scurfy, glabrous on the upper side and in the fresh state much darker green, elliptically elongated or the smaller ones ovately elliptic, apex obtuse, base similar though frequently unequally terminating, the basal one third entire, otherwise obscurely crenate, the lamina on our specimen varying from 10 to 18 cm long, 6 to 8 cm wide across the middle or immediately below it, flat; petiole somewhat flattened and shallowly grooved along the upper side, otherwise covered with deciduous scales or hairs, 3 to 5 cm long, usually with axillary bracts; these bracts are nearly 1 cm long, oblong in shape and are densely scurfy; midrib plane and glabrous above except at the base, quite broad toward the base beneath, with about 3 pairs of much ascendingly curved lateral nerves, the larger ones usually branched along the outer side, reticulations mainly toward the ends of the lateral nerves and very coarse. Inflorescence usually solitary from the leaf axils, ascending; peduncle strict, 1 to 2 cm long, densely yellowish brown scurfy, above the middle provided with a ciliate margin and sparsely scurfy, broad bract 7.5 mm long, terminated by a dense cluster of few to several flowers; involucral bracts likewise sparsely scurfy, ovately oblong, 1 to 1.5 cm long, melleus when dry, few to several according to the size of the inflorescent head, imbricate especially in the bud state; flowers erect, odorless, cremeus or corolla white; bract subtending the calyx or flowers 12 mm long, one half as wide below the middle, ovately elongated, very membranous, margins irregularly rugose and appearing short ciliate, midrib evident and with 1 to 3 pairs of very obscure lateral nerves; calyx 1.75 cm long, the basal one half to two thirds united and subterete, 6 mm thick, more or less roughened and very sparsely strigose; lobes spreading, imbricate in the bud, persistent, the outer 2 or 3 broadly elliptic, about 1 cm long, similar in vestiture and texture to the subtending bracts, the inner bracts only one half as wide, otherwise alike their alternating ones; corolla

inserted upon the concrete calyx throat, erect, the 5 lobes 7 mm long, united toward the base, oblongish, the margins inwardly curved especially toward the obtuse and somewhat recurved apex, membranous, glabrous, white; stamens 5, inserted upon the base of the corolla and alternating with their segments, included; filament nearly 2 mm long, glabrate, compressed, basifixed, tapering from the base to the apex; cells lateral and laterally dehiscent toward the base; style very short, terminated by a deep brown pulverulent 2 mm long and relatively thick more or less angular ellipsoid stigma; placentae of 2 elongated pendant lobes and extending along the central axis; ovules numerous in the upper region.

Type specimen number 13208, *A. D. E. Elmer*, Puerto Princesa (Mt. Pulgar), Palawan, May, 1911.

It seems to differ in a number of details from *Pentaphragma aurantiacum Stapf* from mount Kinabalu of British North Borneo.

CAPPARIDACEAE

♃ **Cleome acutifolia Elm.** n. sp.

Usually solitary or occasionally clustered biennials; tap root thick, terete, white, rigid, crooked or twistingly curved; stems erect, 3 to 4 dm high, terete, green, striate, glabrate or with minutely glandular hairs, usually branched from the base, seldom short branched from above the middle; basal branches relatively short and unbranched, ascendingly curved. Leaves exceedingly variable in size, copious, alternatingly scattered, withering on the old stems toward the base, easily wilting, 3 to 5-foliate; leaflets unequal in size, ascending, minutely glandular especially beneath, the entire margins finely ciliate, a trifle paler green beneath, turning brownish while drying, membranous, usually folded upon the upper side, 1 to 3 cm long, 5 to 8 mm wide across the middle or widest portion, acuminately pointed, base narrowly or slenderly cuneate, fusiform or occasionally oblanceolate; midrib more prominent beneath especially toward the base, similarly glandular; lateral nerves 3 to 5 pairs, much ascending and curved, finely hirsute and glandular, somewhat expanded at the base, varying from 2 to 5 cm in length. Spicate inflorescence terminal, erect, varying from 5 to 15 cm long, the rachis similar to the stem and elongating, the older ones bearing pods below and flowers at the distal end; flowers promiscuously scattered, subtended by reduced leaves, usually solitary, erect, with an unpleasant odor, in full flower in the early forenoons; pedicels averaging 1.25 cm long, green, minutely striate, erect, glandularly pulverulent, longer in the fruiting state; sepals nearly free, 8 mm long, hyaline and with several veins, linear, 1 to 2 mm wide, finely glandular especially along the margins; petals as many, yellow or light yellow toward the base, spreading toward the top, alternating with the sepals, 1 cm long, even more hyaline in the dry specimens but not glandular, narrowly cuneate toward the base or even clawed, obovate, at least 4 mm wide above the middle, rounded or obtusely rounded at the apex, severally veined; stamens about 18, ascending, almost equalling the petals in length; filaments slender, glabrate, yellow, 6 mm long on an average, when young shorter and curved toward the apex; anther 2 mm long, basifixed, 1 mm wide, nearly straight but the young ones strongly curved, linear, blunt at both ends, laterally dehiscent; ovary somewhat compressed, linear, 1 mm wide, 5 mm long, covered with light colored glands; style 1.5 mm long and one half as thick, terminated by a subcapitate stigma. Capsule 6 cm long, 4 mm wide, subterete or compressed, opening along the sutures, ascending, dull green, finely ridged longitudinally, minutely hispid, 1-celled; seeds numerous, densely arranged along the placental sutures, orbicular and flattened, 1.25 mm across, dark brown, longitudinally ridged around the rounded outer portion.

Type specimen number 12697, *A. D. E. Elmer*, Brooks Point (Addison Peak), Palawan, February, 1911.

Gathered in moist sand gravelly soil along the Lara river bed at about 50 feet above sea level. "Lampotaki" is the Tagbanua name.

Cleome viscosa (*Linn.*) *DC.* but the tips of our leaflets are acute not obovately rounded.

CAPRIFOLIACEAE

Viburnum laxum Elm. n. sp.

A 3 to 4 m high and laxly branched shrub; stem 8 cm thick, its main branches arising from below the middle; branchlets numerous, the younger portion yellowish brown pubescent, divaricately rebranched. Leaves opposite, terminal or from the point of branching, membranous, horizontal or descending, curing green, ovately or more commonly short oblong, at the base broadly obtuse to short cuneate or sub panduriform, gradually tapering into the acute to acuminate apex, entire toward or around the base, otherwise coarsely and sharply dentate or very obscurely dentate, the average lamina 8 cm long and 3.5 cm wide at the middle or just below it, the flat darker green side nearly glabrous and very finely blistery, soft but sparsely pubescent beneath; petioles 5 to 8 mm long, densely pubescent; midrib similar on both sides of the leaf, bold beneath, impressed above; lateral nerves 5 to 7 pairs, strict, much ascending, nearly parallel, tips terminating into the teeth, relatively bold and hairy beneath, reticulations very obscure, not seen from the upper surface. Inflorescence terminal, solitary or few pedunculate, about 3 cm long and fully as wide, laxly and subumbellately branched from below the middle, the branchlets similarly rebranched toward their distal ends; all slender and soft sulphureus pubescent; ultimate branchlets terminated by a solitary flower, the lateral short ones bearing at their ends a small group of flowers; pedicel 2 to 3 or even 5 mm long, subtended at the base by very minute bracts; flowers sessile or upon 5 mm long lanose or finely stellate pubescent stalks which are terminated by a brush of ciliate hairs, yellowish white, becoming easily detached; perianth tube 2 mm long by 1 mm thick, finely glandular, ciliate hairy; the 5 lobes rotately spreading, ovately elliptic, 2.5 mm long, 1.5 mm wide, veiny, glabrous on both sides except the middle region toward the base; stamens also 5, alternating with the segments, the glabrous and subterete filaments 2 mm long; anther dorsifixed, 1 mm long, oblong, obscurely emarginate at the apex, base lobed; superior ovary glabrous, ovoid, rugosely 5-lobed, bearing a thick more or less wrinkled stigma.

Type specimen number 14283, *A. D. E. Elmer,* Baguio (Mt. Santo Tomas), Province of Benguet, Luzon, March, 1913.

Collected in gravelly red soil along the shaded north mountain trail of Santo Tomas at 6500 feet altitude.

Leaves instead of being broadly rounded at the base are more or less tapering, thereby placing the greatest width across the middle, not below the middle as in 1345 *Cuming* the specimen upon which *Rolfe* founded his *Viburnum luzonicum.* Our leaves are also less pubescent and thinner in texture, twigs and inflorescent branchlets more laxly spreading and its fewer flowers are without distinct clayx teeth.

23 **Viburnum luzonicum apoense Elm.** n. var.

Shrub, 3 m high and with a 6 cm thick stem; main branches arising from below the middle, ultimately laxly rebranched; wood moderately hard, somewhat reddish, quite heavy, odorless and tasteless; bark smooth, brown and gray mottled. Leaves submembranous, light green on both surfaces, opposite, nearly flat, broadly rounded at the base, the sharply acuminate apex recurved, horizontally or descendingly spreading, entire or only obscurely apiculate toward the apex, glabrous above except along the midvein, ovately elongated, the average lamina 8 cm long by one half as wide toward the base; midrib dirty yellowish pubescent below, only slightly so on the upper side; lateral nerves 5 on each side, much ascending and curved, also pubescent, cross bars evident from beneath; petiole 8 mm long, tawny pubescent. Inflorescence terminal, erect or suberect, exceeded by the foliage, 3 to 5 cm long, verticellately branched from below the middle, fully as wide as long; peduncle solitary or frequently more, one third as long, short hairy; main branches puberulent, rebranched toward the distal ends; pedicels 1 to 3 mm long, nearly twice as long in the fruiting state; flowers slightly odorous, creamy white throughout, usually few clustered, subsessile in the bud state; calyx sessile or upon 1 to 2 mm long pubescent pedicels, obscurely articulate and occasionally subtended by a minute bract or more, 2 mm long, subcylindric except the toothed crown, short yellowish pubescent; corolla united around the base, glabrous on the upper side, strigose on the lower side especially toward the base, the individual segments 2.5 mm long by 1.5 mm wide, elliptic in shape, occasionally unequal in size, more or less veiny; stamens 5 or as many as there are corolla segments, inserted upon their bases and alternating with them; filaments 1.5 mm long, glabrous, subterete; anther broadly elliptic, with truncately rounded ends or narrowly notched at the base, 0.5 to 0.75 mm long, dorsifixed; the exerted ovary portion cone-like and subglaucous, terminated by a large subcapitate stigma.

Type specimen number 10791, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, May, 1909.

Collected on wooded ridges along the north side of the Baruring river at 2500 feet altitude. "Bangas-bangas" in Bagobo.

Distributed as *Viburnum luzonicum Rolfe.*

Viburnum valerianicum Elm. n. sp.

A spreading or suberect shrub; stem 5 cm thick, 3 m high, branched from the middle; branches and twigs curved and freely rebranched, the latter densely lenticelled, tips of the young green portion glabrous. Leaves opposite, copious toward the terminal portion of the twigs, ascending or horizontal, coriaceous, lucid on the upper side, much lighter, green on the nether side, drying unequally dull brown, broadly obtuse at the base, the acuminate apex recurved, edges entire or distantly apiculate, glabrous, ovately oblong or the smallest ones broadly lanceolate, the average blades 8 cm long by 2.5 cm wide below the middle; petiole glabrous, 1.5 cm long, caniculate along the upper side, frequently recurved; midvein edged beneath, caniculate above, with a prominent pair of basal lateral nerves arising 5 mm from the base of the blade, with 1 or 2 minor lateral pairs arising from above the middle, cross bars or reticulations none or very obscure, woolly glands in the axils of the lateral nerves on the lower side; stipule none. Inflorescence terminal, erect or somewhat recurved, 3 to 5 cm long and nearly as broad, umbellately branched from below the middle, peduncle one third as long, shining yellowish green though brown when dry, more or less angular; main branches similar, longer than the peduncle proper, rebranched toward their distal ends only; pedicel varying from 1 to 3 mm long; calyx greenish, glabrous, subarticulate at the base, narrowly cup shaped, 1.5 mm high including the 5 divergent apiculate teeth; corolla yellowish green, also glabrous except the sparsely pubescent tube on the inside, 2.5 mm long, twice as broad, the basal one half united into a broad tube; the 5 segments elliptic or oblong, rounded at the apex, strongly recurved in anthesis, the margins very finely ciliate; stamens 5, free, inserted upon the base of the corolla tube and alternating with the segments; filaments suberect, 3.5 mm long, fleshy and subterete, glabrous, gradually pointed toward the apex and centrally curved; anther broadly elliptic, shallowly bilobed at both ends, subdorsifixed, cells widely dehiscing laterally; ovary one half imbedded, the yellowish green apical portion flatly conical and irregularly rugose, terminated by a minute sessile stigma.

Type specimen number 14264, *A. D. E. Elmer*, Baguio (Mt. Santo Tomas), Province of Benguet, Luzon, March, 1913.

This same species I have collected ten years ago in the same rocky soil of a steep northern slope of Santo Tomas at 7500 feet altitude. Other collectors have failed to collect it. The inflorescence reminds one of *Schefflera* and its strong odor especially after being cured is that of *Valeriana.*

Dr. Aug. Henry's number 3415a from central China or *Viburnum propincuum Hemsl.* is a very closely related species.

CELASTRACEAE

Celastrus apoensis Elm. n. sp.

A lofty tree climber; stem 3 to 7 cm thick, freely branched toward the top; branches looping and far reaching, branchlets relatively short and blackish brown, twigs glabrous; wood soft and flexible, whitish toward the center, without odor or taste; old bark rugose and grayish brown, smooth and reddish brown on the branches. Leaves coriaceous, glabrous, lucid on both sides, drying unequally blackish brown on both sides, shallowly conduplicate, more yellowish green beneath, the obtuse to acute apex recurved, the rounded or broadly obtuse base entire, otherwise serrately apiculate, the edges slightly involute in the dry state, elliptic or oblongish, exceedingly variable in size, the larger blades 8 cm long by 4.5 cm wide, alternatingly scattered along all branchlets; midrib conspicuous from beneath, plane above; lateral nerves 2 to 4 pairs, also glabrous, strongly ascendingly curved, tips coarsely anastomosing, reticulations very coarse and less conspicuous; petiole less than 1 cm long, shallowly grooved along the upper flattened surface. Inflorescence greenish, odorless, the petals creamy white, style and calyx greenish, ovary rim yellow, anthers also cremeus. Infrutescence chiefly terminal or from the uppermost leaf axils, varying from a few to 10 cm long, only sparsely paniculately branched from the middle, the lower branches subtended by persistent foliaceous bracts and very sparingly rebranched; fruits mostly in small groups at the ends of the main branchlets; pedicels less than 1 cm long, yellow, angularly obovoid, the 3 persistent carpels strongly reflexed after dehiscence, 2 cm long, mucronate at the apex, the basal portion marked by the rim; seeds surrounded by an orange red mealy coat.

Type specimen number 11411, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Discovered in dense moss laden forests at 6500 feet altitude of the mountain whose name in bears. The Bagobos call it "Mangauwat."

Not *Celastrus paniculatus Willd.* or *Celastrus polybotrys Turcz.* nor *Celastrus championi Benth.*, although nearest related to the last.

21 **Evonymus marivelensis Elm.** n. sp.

Shrub, 3 to 4 m high; twigs slender, terete, smooth, glabrous. Leaves opposite, scattered, horizontally spreading, glabrous, oblongish, drying dull grayish green, gradually tapering into the acute to acuminate apex, the acute or obtuse base entire, otherwise the margins are obscurely crenately serrate, the larger lamina 12.5 cm long and 4.5 cm wide across the middle; midvein prominent beneath; the 5 to 7 lateral pairs of nerves oblique, relatively inconspicuous, coarsely anastomosing above the middle, reticulations also coarse and more plainly visible from the upper side; petiole 5 to 7.5 mm long, glabrous, channelled along the upper side. Young infrutescence lateral or occasionally axillary; peduncle very slender, green, glabrous, 3 to 8 cm long, subpendulous, usually subtended by an apiculate bract, bearing few to several scattering bracts toward the distal end, usually terminated by a single fruit; fruit glabrous, subglobose, subtended by the persistent calyx rim, 1.5 cm in diameter, turning yellowish red when mature.

Type specimen number 6644, *A. D. E. Elmer*, Lamao (Mt. Mariveles), Province of Bataan, Luzon, November, 1904.

Collected along a creek depression in the woods at about 2000 feet altitude of the mountain after which it is named.

Evidently not the same as our common *Evonymus javanicus Blm.*

COMBRETACEAE

27 **Terminalia merrillii Elm.** n. sp.

A large tree; trunk 1 m thick, 15 m high, terete, with its main branches toward the top and widely spreading; wood moderately hard, the central portion murky white, odorless and tasteless; bark thick, yellowish, smoothish; twigs gray, quite numerous, ascendingly curved, terete, the young tips sparsely pubescent. Leaves crowded toward the ends of the branchlets, curvingly folded upon the upper much deeper green surface, sublucid on both sides, drying nearly fuligineus, glabrous, entire, obovate, 1 dm long by 4 cm wide above the middle, rounded at the apex, broadly cuneate toward the base, occasionally much smaller; midrib raised beneath, blackish, flat on the upper surface; lateral nerves strongly ascending, 5 or 6 pairs, similarly prominent beneath, darker brown or nearly black in the dry state, their tips anastomosing, reticulations plain yet much less prominent beneath; petiole glabrous, 1 cm long, plane on the upper side. Infrutescence ascending, 7 to 14 cm long, arising beneath the foliage; spikes unbranched, glabrous, rather slender; fruits few, hard, green, smooth, fusiformly ellipsoid, sessile, at right angles to the spike, apex more tapering to a fine point, 5 cm long, 3 cm thick, the green fibrous meat enclosing a large stony nut and which contains a flattened seed.

Type specimen number 11873, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, September, 1909.

This fine species is here and there scattered in rich soil of dense forests at about 4000 feet altitude of mount Calelan and elsewhere. Dedicated to *E. D. Merrill*. It is well known to the Bagobos as "Samulocco" and its nuts are eaten by them.

Leaves more strongly nerved and reticulated, fruits larger and more tapering than in *Terminalia pellucida Presl.*

COMPOSITAE

Blumea subsericans Elm. n. sp.

Strict bi or perennials; stems erect, sparingly branched, terete, yellowish green, 1 m high or more or less, finely striate longitudinally, the upper portion whitish floccose. Leaves subcoriaceous, ascending, green on the upper tomentose and slightly conduplicate surface, beneath grayish white lanose or subsericeous, exceedingly variable in size, in the young state more numerous at the base but soon withering, even the basal cauline ones ultimately disappearing, 8 cm long for the larger persisting cauline ones, obovately elongated, the upper ones less than one half as large, 3 to 4 cm across above the middle, irregularly toothed or lyrately lobed especially toward the base, the serratures or lobules themselves usually toothed, sessile, buds or reduced leaves in their axils, apex rounded or frequently obtuse, smaller lamina oblong and widest across the middle or toward the base; midrib conspicuous on the nether side especially toward the base, densely lanose; lateral nerves less conspicuous, strict, ascending, 5 to 8 on a side, cross reticulations not evident. Inflorescence spicately elongated, erect, terminal, varying from 1 to 2 dm long, the rachis densely woolly; flowers odorless, in shortly branched clusters, purplish, alternating, more numerous or congested at the top; the lower clusters scattering and subtended by reduced leaves of different sizes and from 1 to 3 cm in length, the upper ones subtended by linear bracts; branchlets few and very short, subtended by bracteoles; pedicels 3 to 5 mm long, long and densely silky hairy; heads campanulate, 7.5 mm high, fully as wide; receptacle flat, roughly pitted but not hairy; involucre lanose, ascending; segments numerous, united at their bases to the receptacle, strongly imbricate, pointed, the inner or longer ones 6 mm long and linear, 0.75 mm wide; the midvein evident, the sides hyaline or subhyaline, the basal portion of the inner ones glabrate; corolla of the larger kind 4.5 mm long and tubular toward the base, gradually widened toward the distal end which is 1.25 mm across and 5-toothed, glabrous except the abruptly or minutely irregular tips of the corolla segments, 5-veined; style fleshy, dark brown and glabrous, the 2 nearly straight and linear stigmatic arms exerted; stamens included or their tips equalling the throat of the corolla; filaments very short and hyaline, free, inserted below the middle of the tubular corolla; anthers contiguous, 2 mm long, hyaline after anthesis, obtusely rounded at their apices, linear, slenderly lobed at their bases; corolla of most of the florets about as long, very slender clear to the very minutely 5-notched apex and subhyaline; the style brown, bearing an exerted darker brown 2-lobed stigma; young achenes 1 mm long, columnar, subterete, slightly hairy especially about the rim-like apex.

Type specimen numbers 11139 and 11904, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Found among the grasses and sedges of cogonals at 1250 feet altitude or above it. The latter number cited was called by the Bagobos "Dalingling." A small leafed and flowered species of a *Vernonia* was collected with the first type number and as I fear was distributed under our new name. The mixture should be cited under 11139 ^{a}.

Not quite *Blumea sericans Hook.*

29

Eupatorium catense Elm. n. sp.

Scandent shrub; stem soft, terete, freely rebranched, 1.5 cm thick, covered with smooth light brown bark; branches divaricate, usually curved downward, dull umbrinus, short pubescent, the older longitudinally ridged branches becoming glabrous, all terete. Leaves opposite, soft membranous, much duller green above, descending, nearly flat or the slender and sharply acuminate tips recurved, base broadly obtuse or rounded, the upper leaves much smaller than the lower or old ones, entire at the base and apex, otherwise crenately toothed, the smallest blades broadly lanceolate, the larger ones ovately elongated and 1 dm long by one half as wide toward the base, the younger ones umbrinus tomentose beneath, less so above, the old ones pulverulent above, puberulent and with very minute yellowish glistening glands beneath, curing blackish on both sides, ascending; petiole 1 to 2.5 cm long, slender, umber brown tomentose, less so when old; midrib slightly impressed and pulverulent along the upper surface, rather conspicuous and fulvus or umbrinus pubescent beneath; lateral nerves 7 to 9, divaricate and more numerous toward the base, others ascendingly curved, tips reticulately united, the reticulations relatively prominent. Inflorescence not rigid, odorous, terminating the branchlets, corymbosely paniculate, 5 to 10 cm long and fully as wide across the base; the lowest and longer pair of branches subtended by a small pair of leaves, the upper ones mere bracts, rebranched from above the middle, the upper branchlets subopposite and subtended by subulate bracteoles, all umber brown tomentose and in the fresh condition slightly viscid; pedicels more or less clustered from the distal ends of the ultimate branches, 3 to 5 mm long or longer, lax and frequently curved, subtended by ciliate 1.5 mm long and linear bracteoles, crisply dark brown pubescent; heads odorous, 7.5 mm long, subcylindric, 3 mm thick, 4 to 6-flowered, all discoid; involucre imbricate, erect but ultimately spreading, the basal ones much reduced and crisply hairy, dull purplish, acute or subacuminate; the inner or longer ones 4 mm long and one fourth as wide, glabrate, concave on the ventral side and with subhyaline margins, oblong, obscurely 3-veined along the middle region, apex bluntly obtuse and frequently finely ciliate; ovary 1.5 mm long, glabrate or only obscurely pubescent, a trifle narrowed toward the base; corolla yellowish white below the middle, purple above, 4.5 mm long, glabrous, tubular, 1 mm thick at the apex or its widest portion, terminated by 5 short acute or triangular teeth; pappus sordid or subolivaceus, 4 mm long, very linear, glabrate or obscurely hispidulous, occasionally shorter ones interspersed; filaments very fine, 5, glabrous, 1.5 mm long, inserted upon the middle portion of the corolla tube; anthers as many, included, contiguous about the style, 1.5 mm long, very linear, truncate at the base, obtusely rounded at the apex; style glabrous except the finely pubescent base, exceeding the corolla, at the apex divided into 2 linear stigmatic nearly 2 to 3 mm long lobes.

Type specimen number 11506, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Climbing upon shrubberies along the Cati creek above its falls at 5750 feet elevation on the northeastern side of mount Apo. The local natives or Bagobos call it "Taraca."

In my opinion it distinct from *Eupatorium sambucifolium Elm.* of northern Luzon.

30 **Gynura agusanense Elm.** n. sp.

Widely sprawling herbs; main branches long, repeatedly rebranched, 1 cm thick, terete, green and densely mottled along the upper or exposed sides with atroviolaceus, glabrate; ultimate branches striate, covered with crisp olivaceus hairs, alternate, relatively short, erect or ascending, the terminal ones bearing flowers. Leaves limp, ascending or the small apical ones erect, pale green on both sides, dull yellowish brown or nearly black when dry, odorous when crushed, short crinkly pubescent when young, puberulent on both sides when old, the lower or lamina 6.5 cm long by 3 cm wide toward the base, broadly rounded at the base and subentire, gradually tapering to the acute or more often acuminate apex, lateral sides dentate, the terminal blades much reduced and broadly lanceolate, otherwise ovately elongated or some of the leaves oblong; midrib darker brown or nearly black in the dry state, appearing flat beneath and a trifle ridged along the upper surface; lateral nerves 4 to 6 on each side, very much ascending and slightly curved, similar in appearance to the midrib but less prominent, occasionally forked and terminating in the teeth, cross bars or reticulations none; petiole 0.75 to 1.25 cm long, compressed, similarly pubescent. Inflorescence ascending, terminal, 1 to 2 dm long, toward the base subtended by small leaves, only occasionally divaricately branched; the bud cluster rather congested toward the distal end of the peduncle or lateral branches, ultimately laxly spreading, the green stalks crinkly olivaceus hairy when dry; branches few, rebranched toward their distal ends; subtended by laciniate 1 cm long bracts; flowers above the middle, upon very slender 1 to 2 cm long puberulent pedicels, provided at the base by smaller bracts and with a few scattering bracteoles, all green when fresh; heads 17.5 mm high, not numerously flowered, 1 cm across the top of the involucre, green below the middle, atropurpureus otherwise, deeply cup shaped or campanulately elongated, mainly composed of 2 series of bracts; the basal bracts varying in length from small mere bracts to 5 mm, 0.75 mm wide, bluntly obtuse at the apex, coriaceous, strigose, imbricate but ultimately recurved; the inner or erect bracts 1 cm long, linear, almost 2 mm wide though subequal in width, folded upon the glabrous ventral side, obtuse at the apex, the middle portion much thinner or subhyaline, remaining straight when old; receptacle flat and circularly pitted; florets all discoid; pappus 1 cm long, very numerous and finely hairy, silky, with many intermixed shorter ones, exceedingly fine scabrid except toward the base; corolla dark ruber red, 14 cm long, glabrous, the apical 3 mm as well as the basal 1 mm enlarged, otherwise slender toward their distal ends, 2 mm long; style slender, knob-like at the base; the 2 stigma lobes exerted, linear, 3 to 5 mm long, slightly puberulent along the upper or stigmatic surface; stamens included; filaments less than 2 mm long, inserted upon the basal portion of the cylindrically enlarged corolla; anthers syngenecious, 2.5 mm long at least, acute at the apex, truncate at the base, very linear, connective evident, otherwise hyaline; achene reddish brown, hispid, 3.5 mm long, 1 mm thick at the middle or widest portion, subterete and frequently curved, terminated by a central blunt point.

Type specimen number 13864, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered in fertile soil of an abandoned field in the sag between Duros and Cawilanan peaks at 3500 feet elevation. Forming dense masses over large dead logs. "Manungbayay" in Manobo.

Related to *Gynura piperi Merr.* and to *Gynura clementis* of the same author. In the latter species the leaves are usually broadest above the middle; in the former the leaves are lanose, entire or nearly so and with but short petioles.

31 **Gynura apoense Elm. n. sp.**

Old stem 2.5 cm thick, terete, sparingly branched all along, 1 to 2.5 m high or long, spreading and reclining upon other vegetation; twigs or rather branches green, suberect, subterete or obscurely fluted, dirty yellowish hairy. Leaves alternate, chiefly along the ultimate branches, ascending or horizontal, thickly coriaceous though soft in texture, light green especially beneath, blackish brown when cured, crisply short pubescent on both sides and somewhat viscid, oblong, 15 cm long including the stalk, 5 cm wide at about the middle, the sharply acute or acuminate apex recurved, cuneate toward the occasionally inequilateral and sublyrately lobed base, otherwise irregularly and unequally toothed or crenate and teeth or lobes apiculate, with a pair or more of large lobes; petiole 1 to 3 cm long, fulvus hairy, decurrent or with one or more of broad lobes which are similar to those of the basal portion of the leaves; stipule broadly oblong, entire or obscurely dentate, 1.25 cm long, quite alike to the petiole ones, like the lamina in texture and hairyness. Inflorescence erect or nearly erect, limp, 2 dm long on my specimen, branched toward the top, the peduncle and branches olivaceus tomentose; the ascending branches seldom rebranched, terminated by few flowering heads, subtended by linear puberulent bracts, the lower ones of which are 2 cm long, white, the upper ones 5 to 8 cm long and setaceously pointed; pedicels 1 to 2 cm long, yellowish short hairy, terete, curved, subtended by similar bracteoles; calyx deep cup shaped, 1.25 to 1.5 cm long, the segments composed of 2 distinct series, the basal series of bracts relatively short, linear, spreading, averaging 5 mm long, scattering, unequal in length, 0.5 to 0.75 mm wide, gradually tapering to the distal ends, hairy; the inner series of bracts green or purplish on the exposed side, also unequal in width, hyaline margined, acuminately pointed, the brown thickened middle portion pubescent along the back, 2 to 3-veined, grown together at the base and persistent; receptacle nearly flat, grayish pubescent; flówers numerous, odorless, deep yellow, suberect, apparently all discoid; ovary 0.5 mm thick, 1.5 mm long, subterete or slightly compressed, glabrous, widest across the middle and longitudinally striate, rim-like at both ends, the basal end provided with a mucronate point; corolla 1.25 cm long, slenderly tubular except the upper 3 mm which is slenderly turbinate, 1.5 mm wide across the acutely 5-toothed apex, glabrous; stamens 5, included; filaments 1.25 mm long or shorter, very fibrillose, inserted at the bottom of the enlarge apical portion of the corolla; anther 1.75 mm long, linear, contiguous about the style, roundly truncate at the base, obtusely pointed at the apex, sides hyaline, style slender, glabrous; the 2 stigmatic lobes exerted, 2 mm long, ultimately much recurved, subcompressed and puberulent along the upper side; pappus 1 cm long, copious, silky, white, with shorter ones interspersed, smooth or toward the free ends very faintly hispidulous.

Type specimen number 11584, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Found this perennial plant in wet earth upon stony banks of the Cati creek at 6000 feet elevation on the northeastern side of the mountain after which it is named. Its vernacular or Bagobo name is "Tagamayig."

Most closely related to *Gynura vidaliana Elm.* and to *Gynura clementis Merr.*

32 **Myriactis mindanaensis Elm.** n. sp.

Solitary or forming masses, bi or perennials, 1 to 2 dm high; roots slender, fibrous but not fleshy, whitish; stem wand-like and suberect toward the top, green at the base, subligneous, solitary or few clustered from the same root iluster, greatly varying in length from 1 cm to 1 dm, longtudinally fluted, glabrate or pulverulent, few branched toward the top. Leaves alternate, mainly ascending, membranous, 3 to 5 cm long or even longer with the petiole, 2 cm wide across the top or the smaller ones only one half as wide, lyrately lobed into linear lobes, the terminal lobe largest and usually with a pair of lateral lobes and which are frequently again lobulate or merely toothed, deep shining green above, paler beneath, curing dull brown, sparsely pubescent on both sides, the upper blades trifidus, the uppermost ones linear and reduced to mere bracts; stalks of the basal leaves slender, glabrate or strigose, petiole-like, that of the cauline leaves well decurrent and subclasping the stem or branch. Peduncle terminating the stem or branches, ascendingly curved toward the base, provided with small leaves, slender, from 5 to 15 cm long, longitudinally striate, dark straw brown when dry, green or yellowish green when fresh, sparingly strigose, above the middle scapelike, terminated by a single 6 mm thick head of very numerous flowers or seeds; involucre green, when old spreading, 7.5 mm across, persistent, united at the base; segments numerous, imbricated, glabrous, the outer few a trifle shorter, all 0.75 mm long, the longer ones 3 mm in length, roundly obtuse at the apex and very minutely ciliate, submembranous; receptacle circular, 1.5 mm across, flat, very rough; ovary 1.5 mm long, compressed, obovate or oblanceolate, glabrous; central or discoid flowers greenish with a corolla 1.5 mm long, the basal one fourth much constricted, the upper portion much expanded and at least 1 mm across the 5-lobed apex, glabrous; stamens 5 and included, the short filaments thread-like and inserted upon the corolla below the middle; anthers yellow, syngenecious, 0.5 mm long, a trifle wider toward the truncately rounded base, apex obtuse or rounded, subhyaline; style slender, its clavate stigma erect and exceeding the corolla; most of the peripheral flowers ligulate, white to pink, ligule 0.75 mm long and 0.5 mm wide, strongly divergent, pubescent on the outside at the base, otherwise glabrous, the middle region thick, margins thinner, apex broadly rounded, more or less conduplicate; ligulate style straight, a trifle longer than the disk, bifid at the base, well surrounded by the ligule and falling with it; achene smooth, glabrous, 0.66 mm wide, almost 2 mm long, compressed, a trifle wider above the middle, constricted and bluntly pointed at the apex.

Type specimen number 11507, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Upon water soaked moss covered rocks strewn along the Cati creek at 5750 feet altitude of the east to northeastern side of mount Apo. "Casarang" in Bagobo.

Vernonia pulgarensis Elm. n. sp.

Climbing upon small trees; stem terete, 2.5 cm thick, very flexible and subherbaceous; the outer wood tissue greenish and radially marked, the inner yellowish and with a large pith, odorless, a trifle sweet; bark yellowish and with a green hypodermis, more or less roughened with blunt lenticels or excrescences; main branches long, freely rebranched, very deep green, also terete, finely striate, ultimately glabrate, the young portion of the twigs short pubescent or puberulent, the free ends drooping. Leaves ascending, limp, very deep green and subvelvety on the upper nearly flat and subglabrate surface, ater when dry, paler beneath when fresh, subolivaceus and short pubescent on the nether side after being cured, membranous, entire or minutely apiculate, broadly rounded or obtuse at the base, rounded or obtuse toward the apiculate apex, elliptic, exceedingly variable in size, the lower blades 13 cm long by 7.5 cm wide at the middle, the upper ones only one third as large, alternatingly scattered; petiole 1.25 to 2 cm long, dark olivaceus short tomentose, flattened especially along the upper side; midrib very pronounced and densely pubescent beneath, pulverulent along the plane upper side; lateral nerves 5 to 7 pairs, ascending and slightly curved except the uppermost ones, relatively prominent and similar in vestiture on both sides, tips reticulately united, other reticulations coarse. Infrutescence terminal from the comparatively short ultimate branches, erect or nearly so, 1.5 dm long on our specimens, about as wide across the base, quite rigid; branches divaricate, alternate, the basal ones 8 cm long, the upper ones one half as long, the lower ones subtended by small leaves, straight, thick and rigid, rebranched from below the middle, densely olivaceus short tomentose; secondary branches short and at right angles, also thick and rigid, similar in vestiture, subtended by deciduous puberulent bracts, 5 to 15 mm long, few and very short rebranched from above the middle; pedicels short, thick, subtended by bracteoles; heads usually solitary and terminal, 5 to 8 mm high, subcampanulate; bracts numerous, of diverse lengths, imbricate; lower bracts very short and pubescent, acute; the inner 5 mm long and only the outer exposed portion of the obtuse bracts puberulent, dry and spreading when old; receptacle flat, pitted; achene 3 mm long, constricted toward the base and also somewhat enlarged, compressed, frequently curved, 1 mm wide across the tip, pulverulently roughened, terminated in the middle by a short rather thick and blunt point; pappus persistent, dull yellowish brown, 6 mm long but with many shorter ones intermixed especially at the base, very slender and finely scabrid, the apical portion of the longer ones appearing a trifle thickened.

Type specimen number 12848, *A. D. E. Elmer*, Puerto Princesa (Mt. Pulgar), Palawan, April, 1911.

On a steep rocky forested incline at 2000 feet altitude. This may be *Vernonia scandens DC.*

31 **Vernonia urdanetense Elm.** n. sp.

A small tree; stem 3 dm thick, 12 m high, crooked and subterete, branched from the middle; wood white though with a yellowish brown tinge, odorless and without taste, soft, light in specific gravity; bark fulvus except the smoothish yellowish gray surface; main limbs spreading, crooked; the slender ultimate ones drooping, short yellowish brown tomentose along the ascendingly curved tips. Leaves alternate, mostly descending, submembranous, nearly flat except the sharply acute to acuminate usually united and recurved apex, base broadly obtuse and frequently a trifle inequilateral, the smaller ones broadly lanceolate or only seldom oblanceolate, the larger elongated lamina 1.5 dm long by 4.5 cm wide across the middle, paler green beneath, the upper side minutely pulverulent or puberulent but soon becoming glabrate, beneath puberulent especially along the midrib and nerves, curing dull brown on both sides, the upper or terminal leaves much reduced; petiole slender, subolivaceus short tomentose, 1 to 3 cm long, subterete and caniculate along the upper side; midrib pronounced beneath, narrowly caniculate along the upper leaf surface, similarly pubescent or tomentose, lateral nerves 7 to 9 on each side in the average blades, ascendingly curved, coarsely interarching or reticulately united, secondary ones from the midrib, reticulations coarse and quite evident from beneath. Inflorescence terminal and from the uppermost leaf axils, paniculate, erect or suberect, lax, 1.5 dm across the base and 2 dm long or longer; peduncle not strictly evident, the lower branches subtended by reduced leaves or the lower inflorescences arising from the uppermost leaf axils; branches strictly ascending, yellowish green, short olivaceous tomentose, slender, the longer 1 dm long, rebranched from above the middle, the branchlets similarly rebranched; pedicels alternatingly clustered toward the distal end of the ultimate branches, 3 to 5 mm long, densely yellowish brown tomentose, subtended by minute bracteoles; flowers profuse, slightly fragrant; involucral bracts imbricate, the outer ones 1 mm long, the inner ones 2.5 mm long by 1 mm wide, all elliptic, densely grayish pubescent on the outside, the inner one chiefly so toward the apex; receptacle flat, small, apparently glabrous; flowers 4 in a head, rayless, all fertile and tubular, erect; achenes 1.5 mm long, 1 mm wide across the truncate apex, narrowed toward the base, somewhat angular and striate, puberulent; pappus dull creamy white, 5 to 6 mm long, equal, very slender from the base though a trifle thicker and minutely scabrous above the middle, subpersistent; corolla 7 mm long, tubular, 1.5 mm thick but somewhat narrower at the base, glabrous, 5-segmented; lobes erect, 1.5 mm long, 0.75 mm wide at the base, gradually tapering from the base to the apex; stamens 5, included; anthers 2.5 mm long, united into a tube, acutely pointed, base bifid or lobed, cell walls transparent; filaments thread-like, about as long, glabrous, obscurely crinkled, inserted upon the middle portion of the corolla; style also glabrous, 6 mm long, at the base button shaped; stigmas 2, extended through the stamineal tube, ultimately strongly recurved, flattened, linear, 2.5 mm long, puberulent along the outer side and toward the apex.

Type specimen number 13634, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

This lividus to white flowered and sweetly fragrant *Vernonia* was collected in the woods of the saddle between Duros and Cawilanan peaks at 3500 feet high above the sea. Named "Bogig" by the Manobos.

Related to *Vernonia arborea Ham.* and *Vernonia lancifolia Merr.* Possibly it is *Vernonia celebica (Blm.) DC.*

35 **Vernonia villarii Elm.** n. sp.

Scandent, shrubby; main stem repeatedly branched, the terete twigs relatively short, the young tips yellowish gray tomentulose. Leaves alternate or more or less bunched near the base of the branchlets, chartaceous, deep or almost lucid green on the upper glabrate side, beneath much lighter green and puberulent especially along the nerves, quite variable, subsessile or upon very short petioles, ascending, nearly flat, obovate or obovately elongated, 5 to 8 cm long, 2 to 3 cm wide above the middle, margins entire but in the dry state strongly involute or even revolute, obtuse or occasionally acute at the apex, cuneate toward the base, curing unequally on its 2 sides; midrib ridged on both sides; lateral nerves 5 to 8 on a side, ascendingly curved, rather prominent beneath, tips articulately united, the few cross bars and coarse reticulations quite conspicuous beneath. Inflorescence elongated, terminating the branchlets, about 1 to 1.5 dm long; flowers more numerous toward the distal end, otherwise alternatingly scattered and leaf subtended, the terminal ones upon short branches, subtended by small obovate bracts; pedicels ascending, slender, as long as 2 cm, puberulent but in age glabrate; old heads with the pappus 2.5 cm wide, 2 cm high; receptacle flat, pitted but not hairy, involucre campanulate, 1.25 cm across the top, broadly rounded at the base; bracts numerous, dry and persistent, strongly imbricated, all obtuse, pulverulent on their exposed outside portion, the basal ones very short, gradually becoming longer, the linear inner or or longer ones 7.5 mm long and 1.5 cm wide; old or withered corolla 8 to 9 mm long, tubular below the middle, otherwise somewhat inflated and deep cup shaped, the basal portion glabrous, the upper portion finely granular on the exterior; segments 5, nearly equal, triangularly elongated, averaging 1.5 mm long, inwardly curved; stamens also 5, included; filaments thread-like, glabrous, 3 mm long, inserted upon the basal expanded portion of the corolla; anther apparently linear; style terete, relatively thick and fleshy, glabrous or sparsely hairy; achene 4.5 mm long, 1 mm thick, somewhat thinner toward the base, truncate at the apex, longitudinally ridged and light granular, usually a trifle curved toward the base; pappus subpersistent, forming a circular reddish brown brush, similarly curved, 7.5 mm long, numerous, some few shorter ones intermixed, the longer ones a trifle thickened at their distal ends, finely scabrous all along, contiguous at the base.

Type specimen number 13171, *A. D. E. Elmer*, Puerto Princesa (Mt. Pulgar), Palawan, May, 1911.

In the woods of the forested ridge at 250 feet altitude. This may possibly be *Vernonia cuneata* (*DC.*) *Less.*

CONNARACEAE

Connarus urdanetensis Elm. n. sp.

A sprawling and subscandent shrub; stem 3 m long, 1.75 cm thick, terete, branched all along; wood quite hard or tough, terete, covered with smooth brown bark; twigs horizontally spreading, rigid, terete, the young tips olivaceus puberulent. Leaves similarly spreading, subchartaceous, flat or only the apex recurved much lighter green beneath, drying almost equally greenish brown on both surfaces, entire, glabrous, broadly obtuse or rounded at the base, apex abruptly though sharply acuminate, broadly oblong or subelliptic, alternate, average blades 15 cm long by 5.6 cm wide at the middle; midvein prominent beneath, grooved along the upper side, puberulent or becoming glabrous, with 5 pairs of lateral nerves, archingly united, the coarse and very fine reticulations slightly puberulent beneath especially so in the younger state; petiole 3 cm long, terete, faintly puberulent, thickened at both ends. Inflorescence divaricate or ascending, 1 to 3 cm long, usually in the leaf axils; peduncle paniculately branched from the base, finely pubescent as are also its short branches; the short branchlets subtended by bract vestiges; calyx sessile, articulated at the short constricted base, thickly coriaceous, puberulent on the exterior, erect, at least 3 mm long; teeth 5, subequal, acute or obtuse at the apex, imbricate, rather conspicuously convex on the back, the basal one third united into a concrete somewhat angular stalk; petals free, alternating with the calyx teeth, cremeus, oblong, 4.5 mm long by one half as wide, truncate at the base, rounded at the apex, veiny, the basal portion subglabrous especially upon the upper surface, otherwise finely ciliate pubescent or puberulent, the distal portion reflexed in anthesis; stamens 10, in 2 alternating series of fertile and sterile ones; filaments thick, the sterile ones 1 mm long and subglabrous, the fertile ones 1.5 mm long and densely ciliate on their sides toward the base, all more or less united into a pubescent rim; anther basifixed, auriculately lobed at the base, rounded or slightly emarginate at the apex, ovately elliptic; ovary 4 mm long, hairy, ellipsoidly elongated, somewhat longitudinally angular, constricted into a short neck toward the apex; stigma glabrous, fleshy, much expanded, apiculately fringed. Young capsules strongly recurved, trigonous and somewhat hairy.

Type specimen number 14043, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered on a rocky ridge with more or less forests between Duros and Cawilanan peaks at 3500 feet altitude.

"Pangalamag" in the Manobo dialect.

37 **Ellipanthus burebidensis Elm.** n. sp.

Shrub 2 m high; bark smooth, brown and gray mottled; wood dingy white, tasteless, with a faint unpleasant odor, moderately hard; branches not numerous, rather slender and widely spreading, the young portion densely fulvus. Leaves descending, coriaceous, dark green and glabrous on the upper surface, flat or only the sharply acuminate apex recurved, much lighter green and short pubescent beneath, base obtuse or rounded, entire, oblong, 1 to 2 dm long, 6 to 8 cm wide at the middle, appearing sordid brown when dry especially beneath; midrib stoutly raised on the nether surface, olivaceus pulverulent along the upper shallowly impressed side, ultimately glabrous, lateral nerves 5 to 7 pairs, oblique, bold toward the base, coarsely branched toward their ends which are usually united, reticulations coarse; petiole short fulvus pubescent, 1 cm long, thickened at the ends, ultimately glabrate. Infrutescence axillary and terminal, erect; stalk 1 to 2 cm long, green and olivaceus pubescent, occasionally very short branched; fruits few clustered, yellowish green, velvety or densely covered with soft fulvus hairs, obovoidly ellipsoid or slightly flattened, apex truncate, the basal 5 mm stipitately constricted, narrowest along the suture, 2 cm long without the basal constriction, 1.25 cm thick, broadly rounded opposite the suture; seed solitary, shining, nearly black.

Type specimen number 11941, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, October, 1909.

Found upon a dry forested ridge near the summit of mount Burebid at 3500 feet elevation. The vernacular Bagobo name is "Dangalis."

This genus represents in our archipelago several very critical species, hardly recognizable by vegetative or fruiting or flowering material alone.

38 **Ellipanthus vidalii Elm.** n. sp.

Small shrub-like tree; stem 1.5 dm thick, 5 m high, branched from the middle; wood whitish, moderately soft, burly, oderless and tasteless; bark relatively thin, smooth, brown mixed with gray on the branches, reddish beneath the epidermis; branchlets freely rebranched, the ultimate ones rather slender and terete, the young portion densely covered with subolivaceus short hairs. Leaves alternate, thinly coriaceous, descending, lucid green and glabrous on the upper folded side; the slender and sharply acuminate apex recurved, paler and short pubescent beneath, ultimately also glabrous, base usually rounded, oblong or ovately so, the normal blades 15 cm long, 6 cm wide, frequently smaller, curing nearly umber brown, entire; midrib pronounced and olivaceus puberulent beneath, impressed and in the early state puberulent on the upper side; lateral nerves 5 to 8 pairs, ascendingly curved, tips anastomosing, similar to the midrib on the nether side, reticulations quite evident; petiole divaricate, terete, olivaceus pubescent especially when young, thickened at both ends. Infrutescence lateral and below the foliage or from the lowermost leaf axils, suberect; stalk 1 to 2 cm long, occasionally few branched from the base, very thick, similarly hairy; fruit few clustered toward the end, upon very thick but short pedicels, flattish, the basal 2 cm slenderly constricted and recurved, peach to orange red, covered with short tawny or fulvus hairs, rounded along one side, obscurely ridged along the opposite side; seed solitary, shining black when dry, the basal portion with a thickened yellowish caruncle.

Type specimen number 12406, *A. D. E. Elmer*, Magallanes (Mt. Giting-ginting), Island of Sibuyan, May, 1910.

Gathered on northern wooded limestone hills toward the coast near Ipil. The local Visayan called it "Tsalingwak." Dedicated to *Vidal y Soler*.

Only critically distinguished from *Ellipanthus luzonensis Vid.*

39

Rourea imbricata Elm. n. sp.

A tough and scandent shrub; stem crooked or curved, 2 cm thick, rigid, 5 m high, terete, branched toward the top; the thin sapwood white, otherwise reddish tinged, quite odorless and without taste; bark relatively thick, smooth, brown and gray mixed, the hypodermis green, otherwise testaceus; main branches long and sprawling, subdrooping, branchlets comparatively short and more or less clustered. Leaves descending, chartaceous, drying brown, glabrous and smooth, imparipinnate, with 3 to 5 leaflets, entire, tips recurved; terminal leaflet always largest, 14 cm long by 6.5 cm wide across the middle, the lower or subopposite ones ovately oblong while those of the terminal ones are more elliptically oblong, base obtusely rounded, apex acute to acuminate; petiole usually 3 to 5 cm long, terete, glabrous, thickened at the base, bearing in the axils isabellinus hairy buds; petiolule 5 mm long, somewhat compressed and fluted along the upper side; midrib quite conspicuous beneath, very smooth, with 3 to 5 pairs of lateral nerves, in the larger lamina 2 pairs of the nerves from near the base and running nearly parallel with the middle one, the upper pair much ascendingly curved, cross nerves and fine reticulations more evident from the upper surface. Inflorescence suberect, terminal or from the uppermost leaf axils, 3 to 8 cm long; peduncle solitary or few clustered, glabrous, branched from the middle, brown, subtended by deciduous puberulent bracts, obscurely compressed; branches similarly rebranched and subtended by bracts; pedicels alternating or in pairs, strict, slender, reddish, 5 to 8 mm long, subtended by ciliate bracteoles; bud after anthesis ovoid, 4 to 5 mm long; the 5 brick red perianth segments nearly all equal, united at the base, strongly imbricate, 4 mm long, 3 mm wide toward the base, glabrous, the outer ones reddish brown punctate, concavo-convex, the inner ones more distinctly striate, broadly ovate in shape, coriaceous; stamens 10, inserted around the ovary; filaments glabrous, united at the very base into a short rim, 3 mm long, narrowly linear, flattened, the sides subhyaline; anther broadly orbicular or lenticular, 0.75 mm across; pistils also glabrous, 2 mm long, erect, 5, grouped closely together; ovary elongated, compressed, bulged along the back, straight on the ventral side, 1 mm long; style about as long; stigmas pale white and slightly oblique. Young fruit ovoidly ellipsoid, dark green.

Type specimen number 14309, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Collected in a moist wooded depression at 3750 feet altitude near the summit of Duros peak. According to the Manobos its vernacular name is "Dakolay."

Apparently distinct in a number of details from *Cuming's* number 752.

150 Rourea microcarpa Elm. n. sp.

A woody tree trunk climber; stem terete, 1.75 cm thick, 7 m high, occasionally twining, repeatedly branched toward the top; twigs relatively short and wiry, glabrous. Leaves alternate, greatly varying in size, imparipinnate, the smaller ones 3 and the larger ones 5-pinnate, glabrous, subchartaceous, only the acute tips recurved, otherwise horizontally spreading, slightly paler beneath, curing brown on both surfaces, base obtuse or obtusely rounded, the terminal leaflets usually a trifle larger, entire, elliptically oblong or the smaller ones more ovately oblong, the lateral pairs subopposite, the average leaflet is 9 cm long and 4 cm wide at the middle; petiole proper varying from 1 to 5 cm in length, subterete, also glabrous, reddish brown when dry; petiolule 5 mm long, flattish and channelled along the upper side; midrib prominent and lighter brown beneath, with 3 to 5 pairs of ascendingly curved lateral nerves, reticulations quite evident from both sides. Infrutescence erect, solitary or in small clusters from the leaf axils or subterminal, 3 to 8 cm long; peduncle glabrous, branched from near the base, subtended by caducous bracts, more or less angular or compressed in the dry state; pedicel strict, slender, 8 mm long, thickened toward the distal end, terete, glabrous, subtended by caducous bract vestiges; calyx cup shaped, green, 5 mm high and nearly as thick; the 5 nearly equal segments broadly obtuse or rounded, rigid, strongly imbricate, the basal one third united, the distal margin subhyaline, the outer ones ovately elliptic, the inner broadly elliptic; fruits 1-seeded, darker green than the calyx, terete, 7 mm long, 5 mm thick, truncately constricted at the apex, finely pointed, very minutely striate longitudinally, curing dark brown.

Type specimen number 14229, *A. D. E. Elmer*, Mambajao, Island of Camiguin, Mindanao, November, 1912.

Collected in moist fertile soil of a humid and rather densely wooded ravine at 2000 feet altitude.

Rourea volibilis (*Blco.*) *Merr.* but leaves not so broadly rounded and with much smaller fruits. Compare with my number 11057 from Mount Apo. Neither is it the same species as my number 14309 which I have just describe under another name.

41

Rourea subvolubilis Elm. n. sp.

A small shrubby tree climber; stem 2 cm thick, terete, branched; branches widely reaching, the ultimate rather short; twigs somewhat drooping, the green and glabrous portion dull reddish brown when dry; wood tough, whitish, without odor or taste; bark smooth, chiefly brown but with some gray blotches. Leaves spreading, mostly descending, well scattered along the branchlets, 3 dm long, normally with 5 leaflets; rachis including the peduncle 1.5 to 2 dm long, likewise glabrous, subterete, minutely caniculate along the upper side, reddish brown when dry; petiole proper one third as long, similar to the rachis, much thickened at the ascendingly curved base which turns nearly black while drying; leaflets subopposite, odd pinnate, thinly coriaceous, flat or only the abrupt short bluntly rounded tip recurved, sublucid and a trifle darker green on the upper surface, dull brown on both sides when dry, the terminal leaflet frequently much larger and broadly elliptic, the basal or smaller ones broadly ovate and 7 cm long, the middle ones obtusely rounded only at the base, entire although edges rugose; petiolule 3 to 5 mm long, thick, black in the dry state at least; midrib conspicuous beneath, a trifle sunken on the upper side especially toward the base; lateral nerves about 5 pairs, the basal pair relatively faint, the others ascendingly curved and more prominent beneath, coarsely reticulated toward their distal ends, reticulations much less prominent beneath but equally seen from above. Inflorescence usually clustered from the uppermost leaf axils or from the axils of specialized stalks, chiefly ascending; the individual stalks varying from a few to 10 cm in length, whitish when fresh, dark reddish brown when dry, glabrous, alternatingly branched from below the middle, the ultimate branchlets very slender though relatively short; flowers alternatingly scattered or grouped toward the ends mostly, strongly and sweetly fragrant; pedicel whitish, 6 mm long, slender, glabrous, enlarged toward the distal end; calyx greenish, 3 mm long, punctate or pulverulent, glabrous, deeply cup shaped, subelliptic to subobovate, rounded or truncate at the apex and terminated into an obscure usually finely hairy point, the sides imbricate, the 4 segments unequally in width, united toward the base, very strongly and imbricatingly folded in the old flowers and assuming an ovoidly elongated shape, persistent; petals membranous, pure white, glabrous, 6 mm long and one fourth as wide at least, oblong, widest toward the broadly rounded apex, widely spreading in anthesis, finely veined, subequal, also 5 in number, early falling; stamens 10 or more, the inner series are one third shorter and sterile; filaments slender, much dilated at the bases, glabrous, the longer or outer ones 5 mm in length, at their distal ends slightly expanded; anther pale yellow, broadly elliptic, 0.75 mm long, basifixed or nearly so, connective thick and deep reddish, plane on the back, old cell walls much lighter in color and appearing ridged or winged; pistils not observed.

Type specimen number 11180, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Gathered in moist woods along the Sibulan river at about 2250 feet altitude. Its Bagobo name is "Calayan."

In my opinion it is specifically distinct from 752 *Cuming* or the type specimen of *Rourea heterophylla Planch.*

CONVOLVULACEAE

47 **Erycibe hallieriana Elm.** n. sp.

A lofty tree climber and sprawling over their tops; stem 3.5 cm thick, numerously rebranched, the branchlets tough, covered with grayish minutely lenticelled bark; wood greenish white, also tough, odorless and tasteless, the pith comparatively large; young twig portion badius hairy but soon becoming glabrous. Leaves thickly coriaceous, descending, alternatingly scattered along the wiry branchlets, curvingly conduplicate on the upper dull green surface, paler green beneath, glabrous, entire margins minutely involute, apex obtuse or short and bluntly acute, base rounded or broadly obtuse, elliptic or ovately oblong, lamina 7.5 cm long, 3.5 cm across the widest portion, nearly black on the upper side when dry, dull brown on the nether side; midrib bold beneath, minutely grooved along the upper side; the 6 to 9 pairs of lateral nerves faint, ascending, their tips strongly curved but not united, reticulations none; petiole glabrous when old, 1 cm long, deeply channelled along the upper side. Inflorescence terminal or upon leafless lateral branchlets, suberect; rachis densely badius pubescent, 1 to 3 dm long, angular in the dry state, more or less wavy, branched all along from near the base; branchlets alternating, less than 3 cm long, divaricate or ascending, similarly pubescent, subtended by bract vestiges, occasionally short rebranched rom above the middle; flowers odorless, scattered toward the distal end of the branches; pedicel 3 mm long, castaneus hirsute, subtended by similarly pubescent bracteoles; buds subglobose; calyx bowl shaped, imbricate, 3 mm high; sepals 5, nearly free, elliptic, castaneus pubescent on the outside and ciliate along the edges, rather thick in the middle portion toward the base, glabrous on the inner side; petals of an equal number, white, the basal one third falsely united into a tube, totalling 7 mm long, only 2.5 mm wide, narrowly oblong, tapering toward the base, the upper one third usually expanded into a left glabrous divaricately spreading wing or occasionally forked or irregular on both halves, both sides but especially the lower pulverulent, the basal portion glabrous as are the rotately spreading wings; stamens 5, included, alternating with the segments and partly adnate to the basal portion of the corolla; filaments glabrous, 2 mm long.

Type specimen number 10918, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, June, 1909.

Collected in the great mount Apo forested basin at 4000 feet altitude, near the Baruring river where the trail from Todaya to Talon crosses. "Salibutbut" is the Bagobo name. Dedicated to *Dr. H. Hallier.*

Related to yet quite distinct from *Erycibe paniculata Roxb.*

43 **Erycibe pararan Elm.** n. sp.

A tree climbing vine; stem 3.5 cm thick, terete, flexible, circling about its host or support, mainly branched at the top; branches widely spreading, the slender free ends drooping; wood soft, yellowish, without odor or taste; bark yellowish gray and minutely checked on the stem, smooth and brown on the branches; twigs tough, terete, the young portion reddish brown puberulent, minutely lenticelled. Leaves alternate, scattered all along the branchlets, elliptic or obovately so, the larger ones 1 dm long and one half as wide, frequently much smaller, short acute or obtuse at the apex, drying dark blackish brown, margins entire and when dry minutely involute in the dry state, drying dark blackish brown, glabrous, rigidly coriaceous; midrib conspicuous beneath, minutely grooved above; the 6 primary lateral pairs of nerves oblique and rather inconspicuous, reticulations none or very few and obscure; petiole 1 cm long, channelled along the upper side, glabrate when old. Young infrutescence erect from the leaf axils, 3 to 15 cm long, paniculately branched from below the middle; branches alternating, rebranched, subtended at the the base by a thick scar; pedicels less than 5 mm long, also subtended by bract vestiges, ferrugineus puberulent, all the stalks more or less angularly compressed; calyx somewhat flattened toward the base, 2.5 mm high, cup shaped, imbricate, crisply hairy on the outside, rotund, densely ciliate around the margins, 5, the inner ones with subhyaline edges and the overlapping sides nearly hairless; anthers 1.5 mm long, ovoid, notched at the base or point of attachment, a trifle curved and rather sharply pointed; ovary 1 mm long, globose, puberulent, the apical portion covered with a glabrous and somewhat rugose or obscurely lobed stigma. Fruit light green, smooth, ellipsoid.

Type specimen number 11270, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Not quite the same as the preceding species.

Rivea apoensis Elm. n. sp.

A lofty tree climber; stem curved, branched along the tree trunk, terete, 7.5 cm thick, flexible; wood conspicuously ringed, soft, yellow, with a fetid odor and bitter taste; bark thin, brown, finely checked longitudinally; branches green or yellowish so, slender, forming interlaced masses, yellowish gray puberulent, occasionally with long strigose hairs. Leaves usually conduplicate on the upper glabrous dark green and semilucid surface, much lighter green or even purplish beneath and sparsely hairy when young, the acute or acuminate tips strongly recurved, the margins entire and subinvolute in the dry state at least, ovate, quite variable in size, base broadly rounded and usually shallowly cordate, the larger blades 1 dm long, 6.5 cm wide below the middle, alternatingly scattered along the branchlets, the upper ones usually smaller, curing blackish and brown on the upper and lower surfaces; midrib finely grooved and glabrous above, prominent and strigose beneath; lateral nerves 7 to 9 pairs, oblique, less prominent, hairy, the basal ones closer together and divaricate, reticulations very obscure; petiole at first strigose, ultimately glabrate, 2 to 4 cm long, ascending, green terete and grooved along the upper side. Inflorescence arising from the uppermost leaf axils, ascending, 3 to 5 cm long or longer; peduncle solitary, yellowish gray hairy, stout, branched toward the top only; branchlets densely hairy, very short and thick, few, mostly ascending; pedicels 5 mm long or less, similar in vestiture or even more hairy; buds small, ovoidly globose, olivaceus hairy, subtended by a whorl of 3 setaceous bracts; bract linear to lanceolate, setaceously pointed, subequal, averaging 1 cm long, puberulent except the glabrous ventral side, caducous; calyx 5-segmented, with olivaceus appressed hairs, 5 to 7 mm long, imbricate, the outer 2 ovately oblong, with entire margins and obtuse points, the inner 3 with thinner more glabrous sides and irregularly truncate or even appendiculate at the apex, all glabrous on the inner sides and outer protected portions, more or less veiny; corolla whitish on the outside, purplish or violaceus on the inner glabrous side, the basal one half broadly tubular and glabrous on the outside, 3 dm long, ultimately splitting into 5 narrowly linear recurved and twisting segments, olivaceus short hairy on the dorsal side of the segments; stamens 5, inserted upon the corolla tube 4 mm from the base, glabrous; filament thin, flat, a trifle wider at the base where it is inserted upon a 4 mm long papillate tongue or fleshy expansion, 1 cm long or longer with the free expanded portion; anther 3 mm long, one half as wide, oblong, rounded at the apex, auriculately lobed at the base, basifixed; ovary 1.5 mm in diameter, subglobose, inserted upon a shallow cup shaped glabrous disk; style also glabrous, equally or exceeding the stamens, terete, thinnest at the apex; stigma 2-lobed at the base, of a 3 mm thick mass and prominently papillose.

Type specimen number 11231, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Associated with other climbing vines and forming dense tangled masses about the tree trunk or its support. Collected in dry forests at 1500 feet altitude. "Dalumosip" is its vernacular or Bagobo name.

At once distinguished from *Rivea luzonensis Hall.* by its different flowers.

Rivea urdanetensis Elm. n. sp.

Climbing and sprawling shrubs; stem twining, 1.75 cm thick or thicker, freely rebranched toward the top; main branches slender, somewhat drooping, covered with smooth dull brown bark; wood with a large pith, the peripheral portion greenish white, the inner mass yellowish brown; twigs green, avellaneus puberulent especially the young tips. Leaves upon ascending petioles, alternatingly scattered along the twigs, horizontal, submembranous, nearly flat but tips very sharply acuminate and recurved, entire, base truncately rounded or shallowly cordate, curing equally brown on both sides, the upper ones much reduced, the lower or larger lamina 1 dm long by 8 cm across toward the base, ovate to cordate, velvety pubescent especially on the nether side, paler beneath in the fresh state; midrib conspicuous beneath, canicculate above; lateral nerves all similar in prominence, 7 to 9 pairs, more numerous toward the base and subdivaricate, the upper ones oblique, nearly straight, cross bars very faint; petiole 1 to 3 cm long, deeply caniculate along the upper side, short hirsute. Inflorescence terminal, 5 to 10 cm long, alternatingly branched; peduncles slender, 3 to 8 cm long, corymbosely branched toward their distal ends; branches densely avellaneus pubescent, usually shorter than 11 cm, subtended by caducous bracts; green bracts 1.5 cm long, lanceolate, slenderly pointed, more densely pubescent on the dorsal side; pedicels 3 to 5 mm long, comparatively thick, short but densely pubescent; calyx segments 5, strongly imbricate, 5 to 7 mm long, ovately rotund, the outer or exposed sides canescent, the inner ones glabrous and thinner in texture, the marginal portion subhyaline, apex broadly obtuse or subtruncate, as broad as long, minutely punctate; corolla 3 cm long, usually divided into 5 ligulate segments to below the middle where it is bulged; the lower portion tubular, 3 mm across, glabrous externally and internally; segments 1.5 mm wide, 1.5 cm long at least, glabrous on the inner side, densely yellowish green hairy on the back except toward the base, light lilacinus when fresh, obtuse at the apex, ultimately spreading; stamens 5, attached to the throat of the tube 1 cm from the base, alternating with the segments, erect; anthers sessile, the entire ribbon-like filament adnate to the corolla tube clear to the base, 3 by 4 mm, distinctly verrucose especially along the marginal sides, with a conspicuous outwardly curved beak; ovary obovoid, 4 to 5 mm long, 3.5 mm thick across the top, the greater portion surrounded by a glabrous and cartilaginous membrane, its crown rounded; style slender, 1.5 or more cm long, bearing a minute white stigma, also glabrous, disk-like at the base.

Type specimen number 13351, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Also associated with other vines of similar habits in the woods along the dry and well drained ridge or knoll called Giwantanan at approximately 2000 feet altitude. The Manobo name is "Cawilan."

It has a close affinity to yet it is specifically distinct from *Rivea apoensis Elm.*

CUNONIACEAE

Weinmannia camiguinensis Elm. n. sp.

Small tree; stem 3 dm thick, subterete, erect, 10 m high, mainly branched from above the middle; bark dull brown, scaling in thin plates; wood white at least around the outside, moderately hard; branchlets terete, strigose when young, numerous, spreading, lax or flexible. Leaves horizontal, submembranous, opposite, copious, varying from 7 to 17 cm long, imparipinnate, 9 to 13-foliate; petiole 1 to 2 cm long, thickened at the base, strigose when young, terete, becoming transversely checked along the upper side; stipule bilobed, 1 cm across, orbicular in general outline, green, glabrous, obscurely crenate along the margins, usually curved upon the nether somewhat paler side, deciduous; rachis flattened and the upper side somewhat ridged, otherwise similar to the petiole; leaflets lanceolate, usually a trifle curved and inequilateral at the obliquely obtuse base, the terminal one largest and acute to acuminate at the base, gradually reduced toward the base, sessile except the apical one which arises from a 2 to 3 mm long petiolule, the average ones about 6 cm long by 1.25 cm wide below the middle, margins crenately serrate, curing brown on both sides; midrib deeply sunken above, prominent beneath and reddish when dry, also long grayish brown hairy along the lower side; lateral nerves in the terminal leaflet about 12 pairs but very faint, less than one half as many in the smaller leaflets, ascending, straight, tips anastomosing, reticulations obscure. Inflorescence terminal, erect or nearly so; spikes few to severally clustered, rarely solitary, only the larger ones occasionally branched, slender, curved, 6 to 10 cm long, at the base subtended by stipular-like bracts, flower bearing from near the base; rachis pale green, drying dark brown, puberulent or subcinereous; flowers odorless, white when fresh, irregularly clustered along the finely pubescent rachis; pedicels slender, 2 mm long, pulverulent, subtended by bract vestiges; calyx 4-lobed, united at the base, puberulent; lobes subcoriaceous, ovately oblong, 0.75

mm long; petals free, alternating with the calyx lobes, elliptic to obovately so, 1.5 mm long, nearly 1 mm wide above the middle, glabrous or sparsely ciliate along the edges, membranous; stamens about 8, fertile, curvingly spreading after anthesis; filaments varying from 2 to 3.5 mm long, slender, glabrous, at the base alternating with 5 clavate glands; ovary ashy gray hairy, conically elongated, terminated by a short glabrous point or style; anther basifixed, 0.5 mm long, at least as wide, deeply notched at the apex, laterally dehiscent.

Type specimen number 14228, *A. D. E. Elmer*, Mambajao, Island of Camiguin, Mindanao, November, 1912.

Collected in densely wooded gulches or ravines of the central mountains at 3500 feet above the sea.

Quite distinct from the other known *Weinmannia* species of the Philippines.

Weinmannia urdanetensis Elm. n. sp.

Burly tree; trunk 3 dm thick, 7 m high or long, crooked and irregularly round, more or less inclining; wood hard, white on the outside, gradually changing to the testaceus center, odorless and quite tasteless; bark brown, scaling; main branches few, crooked and nearly horizontal or even descending from the steep mountain side; twigs very numerous, relatively short and forming dense bushes toward the end of the main branches, terete, the younger portions subolivaceus pubescent, short rebranched here and there from the leaf axils. Leaves opposite, very profuse, ascending, imparipinnate, 3 to 5 cm long, leaflet bearing from near the base, 11 to 17-foliate; short petiole as well as the rachis densely yellowish brown tomentose, obscurely ridged along the upper side and less tomentose; stipule broadly orbicular, 5 mm across, green, entire, thick though deciduous, glabrous or slightly pubescent beneath toward the broadened base; leaflets 4 mm wide at the middle and 10 mm long but most of them small in size, elliptically oblong, sessile, the basal pairs somewhat reduced, paler green or subglaucous green beneath, lucid on both sides, glabrous, obtusely rounded at both ends except the terminal or slightly larger leaflets whose ends are acute, usually somewhat inequilateral toward the rounded and suboblique base, entire except the few very blunt crenate teeth, chartaceous in texture, curing greenish brown on both sides; midrib slightly hairy along the upper obscurely depressed side, prominent beneath and reddish brown when dry at least, also a trifle hairy toward the base; lateral nerves 3 to 5 on each side, obscure, strict and divaricate, reticulately forked and united toward the distal ends. Flowering spikes arising from the terminal leaf axils, very scarce, 1 to 1.5 cm long, fragile, flower bearing from below the middle or from near the base; peduncle and rachis subcinereous or puberulent, subtended by stipular bracts, turning nearly black while drying; flower odorless, pale ruber red even in the bud state, deciduous; pedicels 1.5 mm long, puberulent, subtended by minute bracts; bract subpersistent, 0.75 mm long, rather narrow and sharply pointed, short pubescent on the back; buds globose, less than 1 mm in diameter; calyx 4-segmented, united at the base; segments 1 mm long, submembranous except along the middle region, ovately oblong, glabrous or minutely ciliate along the subhyaline margins and on the dorsal side along the midrib, subpersistent; petals 4, alternating with the calyx segments, free, deciduous, 1.25 mm long by 1 mm wide across the middle, elliptic, membranous and with hyaline sides; fertile stamens 8, surrounding a series of 4 glandular staminodes; filaments in the young state 1 mm long, glabrous, subterete; anthers 0.5 mm long and fully as broad, basifixed, broadly notched at the apex or even lobulate; ovary conically elongated, woolly hairy, terminated by a 2-lobed subsessile glabrous stigma.

Type specimen number 13701, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered this very small leafed species on a steep slope of mixed woods of a wind swept ridge of mount Urdaneta at 5750 feet elevation. According to my Manobo companion its vernacular name is "Calilan" or "Calion."

DILLENIACEAE

48 **Dillenia catmon Elm.** n. sp.

A rather large and sturdy tree; stem 6 dm thick, 10 to 15 m high, branched from below the middle or toward the base, irregularly round; limbs large, ascending, crooked, widely spreading, ultimately numerously rebranched; twigs suberect, quite rigid, usually curved and crooked, the apical green portion strigose and with elongated brown lenticels; wood quite hard and brittle, the thin sapwood white, otherwise nearly incarnatus, odorless and without taste; bark thick, smooth on the dull brown surface, scaling in thin irregular plates, latericius in the middle region, whitish next to the sapwood. Leaves alternate, horizontal, also rigid and chartaceous, shallowly folded upon the upper surface, the short acute tips recurved, much paler green beneath, broadly obtuse or nearly rounded and entire at the base, otherwise coarsely crenately toothed, glabrous, drying reddish brown beneath and greenish gray above, elliptic, greatly varying in size, the larger lamina 18 cm long by one half as wide across the middle or a trifle below it, the smallest or reduced old ones merely 5 cm long, the terminal young leaf light yellowish green and with a similarly colored foliaceous petiole; midrib stout and ridged beneath, plane above except at the base, curing dark reddish brown; lateral nerves 11 to 14 pairs, strict and ascending, similar in color and prominence, cross bars with reticulations minute yet quite visible from beneath, their tips terminating into the subcallous points; petiole 3 to 5 cm long, when old glabrous and rugulose along the upper minutely caniculate side, thickened at the base, in the early state their sides are provided with 7.5 mm broad more or less yellowish hirsute wings which soon fall off. Inflorescence erect, terminal or just below the bud or young leaf, appearing opposite the uppermost regularly matured leaf, 1 to 1.5 dm long, 2 to 3-flowered above the middle; peduncle green and whitish spotted, angularly compressed, curing reddish brown, ultimately glabrous; pedicels thickened at the distal end, articulated, persistent, erect, olivaceus hairy; buds ovoid, 2.5 cm long, ashy gray pubescent; outer sepals 2 cm long by 1.5 cm wide at the middle, broadly elliptic or more ovately elliptic, rigid, yellowish gray pubescent on the outer sides, glabrous on the inner sides, ultimately spreading, imbricate; the inner of the 5 segments narrower and a trifle longer, margins thin and folded upon the ventral side; petals 5, snow white, 5 to 6 cm long, averaging 2 cm in width above the middle, obovately oblong, radially spreading, caducous, curing reddish brown, glabrous; stamens in 2 series, very numerous, dehiscing by apical pores; the radially spreading ones entire, ochroleucus, with a 2.5 mm long somewhat compressed and glabrous filament, its linear anther 6 to 7 mm long by 1 mm wide; the erect or inner ones similar except anther nearly twice as long and connective purplish when fresh; ovary nearly 1 cm long, ovoid, fluted, glabrous, with about a dozen of strongly recurved 1 cm long very linear and slenderly pointed stigmas.

Type specimen number 13564, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Only observed on the summit of Duros peak at 4000 feet elevation. All people of the Philippines call all species of *Dillenia* "Catmon." The Bagobos in the higher altitudes of mount Apo occasionally tapped these trees for water. It had a distinct sulphur taste but otherwise was harmless.

Distinct from *Dillenia bolsteri Merr.* of the Surigao province.

Dillenia mindanaensis Elm. n. sp.

Tree, with a 3 dm thick and 8 m long stem; wood soft, odorless and nearly tasteless, sappy white; bark brown and gray mottled, thinly checked and scaling in small plates; main branches arising from the middle, slightly ascending, crooked, sparingly rebranched; twigs rigid, suberect, terete, 1.5 cm thick. Leaves ascending or horizontally spreading, chartaceous, alternatingly scattered, lucid and brighter green above, glabrous, curing grayish brown, oblong, 4 to 7 dm long without the stalk, 2 to 2.5 cm wide across the widest portion, the largest blades 1 m long and proportionate in width, apex rounded and with a short acute or acuminate point, base also rounded and more or less entire, margins coarsely serrate; midrib very thick and conspicuous beneath, less evident above; lateral nerves 20 to 25 pairs, oblique, parallel, strict, terminated into the serratures, cross bars and reticulations very fine yet quite evident from both sides; petiole 3 to 5 cm long, 5 to 8 mm thick, subterete except the v-shaped channel along the upper side toward the base; stipule adnate and deciduous, dry, 7.5 cm long, folded into a boat, truncate at the apex, at all times glabrous, coarsely veiny, the uppermost ones red. Flowers terminal, arising from the upper bracts; pedicel suberect, 7 to 12 cm long, reddish, terete, about 1 cm thick; sepals 5, ovately oblong or merely oblong, thick and rigid, yellowish green, nearly all alike in size and shape, 5 cm long, 3.5 cm wide across the middle or below it, glabrous, rotately spreading from the base to the middle, the middle or distal one half deeply folded upon the upper side thereby forming a sort of a pouch, apex obtuse, the imbricately overlaid edges thinner, veiny, subtended by a single reddish streaked and greenish nerved bract, with a more acuminate point, a trifle longer than the calyx; petals 5, ascendingly curved, 1 dm long, 7.5 cm wide above the middle, membranous, equally bright yellow all over, obovately rotund, veiny, the basal middle portion thickened; stamens yellow, peripheral, the basal 5 mm filamentous, flattened, linear, the basal portion erect and nearly free, the balance recurved and widely spreading, 1 mm wide, the apex blunt and with 2 pores, the pollen sacs nearly 2 cm long; styles erect in a central concrete mass, radially dissected from the apex into many stigmas; stigma linear, 1 to 2 cm long, descendingly recurved, gradually tapering to the rather sharp and usually curved points, yellowish white or paler yellow than the petals; fruits irregularly globose, 7.5 cm thick, solid, yellowish green, with large thick and green imbricating calyx segments; seeds brown, surrounded by thick succulent sour and juicy folds.

Type specimen number 11883, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, September, 1909.

Discovered in rich humus and well drained soil of woods fronting old clearings at 3000 feet altitude on the Tolon side of the mountain range extending from Apo toward Santa Cruz. Well known to the natives or Bagobos as "Catmon" or "Calambog." What a sight this tree with a yard long leaves and yellow flowers eight inches across would make in a botanical garden!

Distinguished from *Reifferscheidia speciosa Presl* in being entirely glabrous, leaves not ovate and instead of being shallowly dentate ours are serrate; the sepals are more elongated, yellow petals broader and less tapering toward the base.

Saurauia copelandii Elm. n. sp.

An erect 7 m high tree, with a 1.5 dm thick stem; branches widely spreading, the upper ones in subwhorls, thick, the glabrous twigs sparingly rebranched and ascendingly curved; bark dark brown, peeling in thin scales, very soft, white, odorless and without taste. Leaves crowded terminally, coriaceous, alternating, radially spreading, glabrous, flat, shining dark green on the upper side and turning nearly black while drying, much paler green and brown beneath when dry, unequal in size but not in shape, the average measure 3 dm long and 1 dm wide above the middle, obovately oblong or subpandurate, entire toward the narrowing base, otherwise apiculately serrate, broadly obtuse or rounded at the apex; midrib stout and conspicuous beneath, provided with minute brown scales especially toward the base, flat and glabrous above; lateral nerves 12 to 17 pairs, divaricate at the base, much ascendingly curved otherwise, much less conspicuous, the cross bars very faint; petiole about 1 cm long, broad, furrowed along the upper side, usually scaly beneath. Inflorescence axillary but occasionally along the branchlets; peduncles slender, solitary or 2 or 3-clustered and arising from short ligneous tubercles, glabrous, 5 to 8 cm long; flowers pendulous, subtended by elliptic 2 cm long glabrous bracts, solitary or few clustered toward the end of the peduncle; calyx very rigid, cup shaped, green, glabrous, united at the base, 4, in 2 pairs, the outer thicker pair broadly ovate and 1.5 cm long, the 2 alternating inner ones elliptic and with thinner sides, finely veined; corolla campanulate, also rigid, pure white, 2.5 cm long, united below the middle or the basal one third, glabrous; the 5 lobes broadly spreading, obscurely lobed or widely notched, somewhat blistery in the middle region; stamens rather numerous, inserted upon the basal portion of the corolla; filaments 5 mm long, crooked and subcompressed, thick, dark reddish brown when dry, yellowish and fleshy when fresh, glabrate; anthers deeper yellow, equalling the filaments, truncately emarginate at the base, distinctly lobed at the apex, thick, crooked at the point of attachment in the middle of the back; ovary glabrous, conical, 5 mm across; styles 7.5 mm long, glabrous, the basal 2 mm united, divided into 4 slender usually curved arms, each terminated into a small globose stigma; ovules numerous, crowded into 4 dense masses; capsules 4-celled, subglobose; the numerous seeds attached to a thick green central placenta, partitions thin.

Type specimen number 10555, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, May, 1909.

Discovered this unique species in rich soil of a humid wooded bench at 3500 feet of mount Calelan. Rare and is known to the Bagobos as "Balingog." Dedicated to *Dr. E. B. Copeland* who during his first year or two in the Philippine service has made a large collection in this same general region.

51 **Saurauia erythrothrica Elm.** n. sp.

Lax and suberect shrub; stem 5 cm thick, 3 to 4 m high, branched from below the middle; wood rather soft, sappy white, odorless and tasteless; bark smooth and yellowish gray, more yellow on the inner side; main branches few, spreading, laxly rebranched; twigs descending, slender, subterete or angularly ridged, the younger portion densely covered with reddish brown setose hairs, ultimately smooth or glabrous. Leaves alternating, scattered though usually somewhat crowded toward the distal end of the branchlets, mostly horizontal, submembranous, flat, the short abrupt acute to acuminate apex recurved, deep green and sparsely strigose on the upper side, much paler green beneath and bristly reddish subhirsute, base obtusely rounded or broadly cuneate, quite often appearing slightly inequilateral especially toward the base, subovate to obovately elongated, the smaller ones subelliptic, exceedingly variable in size, the larger lamina 1 dm long by 4 cm wide a trifle above the middle, young ones densely beset with purplish hairs, serrately denticulate and ciliate along the edges, deep brown beneath and nearly black above in the dry state; petiole varying from 5 to 10 mm in length, densely red or purplish bristly hairy; midrib frequently a trifle curved, also densely covered beneath with reddish colored bristly hairs, rather conspicuous beneath, plane above; lateral nerves 5 to 8 pairs, ascendingly curved, tips anastomosing, conspicuous beneath and similarly hairy, cross bars and reticulations comparatively faint. Flowers 1 to 3-clustered from the uppermost leaf axils, ordorless, upon descendingly curved slender pedicels; pedicels averaging 1.25 cm long, densely beset with purplish colored spicule-like hairs or scales; calyx segments 5, a trifle united at the base; the outer 2 or 3 segments ovate, 8 mm long, 5 mm wide below the middle, obtuse at the apex, on the dorsal side provided with seta-like hairs, smooth on the inner side, all deep brown in the dry state, margins more or less curved or folded upon the upper surface; the inner 2 or 3 segments a trifle longer and oblong in shape, subtruncate at the apex, smooth except the outer exposed portion which bears a few bristles toward the base; petals 5, contiguous or united at the base only, caducous, glabrous, white, 8 mm long, 2.5 to 3.5 mm wide, widest toward the truncately rounded or irregularly notched apex; stamens many, inserted around the basal portion of the corolla and falling with it; filaments 1.5 mm long, subterete, glabrous; anther as long, strongly curved at the middle, dorsifixed, linearly oblong, end blunt, introrse, laterally dehiscent; ovary conically ovoid, marked with cystoliths, 2 mm across; style 4 mm long, united; stigma capitate, scarcely thicker than the style; fruit a 5 mm thick berry, 3-celled; seeds numerous, 1 mm long, triangular or trapezoid from the side view, deep brown, minutely pitted.

Type specimen number 13821, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Collected in wet more or less stony ground of very humid slopes of dense woods at 5250 feet altitude along the new trail from lake Danao to the summit peaks of mount Urdaneta. "Malaboaya" was its native name according to my Manobo companion.

Distinct from number 57^a of lake Lanao or *Saurauia clementis Merr.* Its dense reddish to purplish hairs serve as a most distinctive character in the field.

Saurauia sampad Elm. n. sp.

Small tree or tree-like; stem 6 to 10 cm thick, 5 to 7 m high, branched from below the middle, subterete and crooked; wood soft, entirely without odor or taste, whitish, its pith large; bark smooth, dark fulvus brown except the lighter brown epidermis; main branches ascending, finally widely spreading, rebranched but not numerously so, twigs long, horizontal or drooping, the leaf bearing portion ascending, angular, furfuraceous, scaly or hispid, succulent. Leaves subcoriaceous, alternatingly clustered toward the ends of the twigs, horizontal or descending, flat, apex short acute, base broadly rounded and usually cordate, exceedingly variable in size, the larger blades 2 dm long by one half as wide a trifle above the middle, the smaller ones 6 cm long, elliptic to elliptically elongated, the larger ones perceptibly narrowed below the middle and obscurely pandurate, the smaller more truly elliptic, edges entire though ciliate or toward the apex obscurely dentately wavy, young ones densely reddish hairy or scaly, short hispid on the upper very dark green surface, beneath much paler brown when dry and more densely reddish hispid than the upper side; midrib stout and densely reddish hispid beneath, the groove along the upper side toward the base covered with similarly colored hispid hairs or scales; lateral nerves 8 to 11 on each side, relatively prominent beneath, divaricate, much ascending toward their distal ends, the upper ones archingly united, the others reticulately united, cross bars and reticulations numerous and very evident beneath, all similar in color and vestiture; petiole 1 to 2 cm long, very stout, densely covered with reddish brown hairs or scales, obscurely compressed or subangular and grooved along the upper side. Inflorescence axillary, subpendant, 7 to 13 cm long; peduncle usually solitary, few branched above the middle, subcompressed and fluted along its sides, densely covered with reddish brown scale-like hairs; branchlets relatively short and thick, similar in vestiture, subtended by foliaceous bracts, all pale green in the fresh state; flowers pendant, odorless, of short duration; pedicels averaging 1.5 cm long, densely covered with scaly hairs; calyx slightly united at the base, 1 cm long, nearly as wide across the basal portion, also very densely covered with scale-like hairs, subrufous, the outer pair coriaceous; the inner ones smooth except the outer exposed portion and more oblong than ovate to subelliptic, petaloid at least in texture, apex of outer sepals rounded, the inner ones subtruncate; petals of an equal number, free, obcuneate in shape, 1.5 cm long, 1 cm wide toward the apex, glabrous, apex truncately rounded and usually notched, forming 2 broad lobes or teeth; stamens numerous, their bases united into a ring and inserted upon the inner base of the corolla segments; filaments 3 mm long, subcompressed, fleshy, glabrate; anther nearly as long, oblong, ends truncate, introrse, laterally dehiscent, dorsifixed, conspicuously bent below the middle; ovary conical, glabrous, 5 mm long and wide at the base; styles 5, distinct, glabrous, rigid, 5 mm long, terminated by a minute capitate stigma; ovules very many.

Type specimen number 13825, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Inhabiting wet earth in a small very humid open gulch at 5250 feet altitude or a little distance beyond lake Danao. To this plant the Manobo gave the name "Sampad."

Certainly not *Saurauia latebracteata Choisy* (*Saurauia cumingiana De Vries*) based upon *Cuming's* number 944. Very near to number 445 of *Father Vanoverberg* from Bontoc, northern Luzon.

Saurauia succulenta Elm. n. sp.

A tree-like shrub; stem 2 dm thick, 7 m high, branched from below the middle, very irregular and extending partly over a streamlet; wood very soft, sappy white, odorless and tasteless; old bark avallaneus and excrescent, yellowish gray on the branches, nearly castaneus beneath the epidermis; main branches spreading, sparingly rebranched, slender, the ultimate ones rather thick and heavy as well as being made rough by the short and thick excrescent scales. Leaves diverse in size, horizontal or descending except the very pale young or apical ones, in the fresh state much paler green beneath, the under side very short avellaneus tomentose in the young blades, ultimately glabrate, the upper side sprinkled with similarly colored spicules, when old glabrate, the edges made rough by spicule-like hairs, curing much lighter brown beneath, rounded and terminated by a short or abrupt though acute point, obovoidly oblong to obovately elongated, usually narrowed toward the rounded base, the larger blades 5 dm long by at least 2 dm wide above the middle, the smallest mature ones 16 cm long by one half as wide, not numerous, alternating toward the ends of the twigs; petiole 1.5 to 3 cm long or longer, stout, terete, only minutely caniculate along the upper side, made very rough by the yellowish gray spicule-like excrescences; midrib very stout, succulent, plane above, glabrate and smooth beneath except toward the base where it is petiole-like, drying similarly brown; lateral nerves of 10 to 20 divaricate pairs, curved toward their tips and reticulately united, less conspicuous but similar in color when dry, cross bars quite evident beneath. Flowers and fruits hanging in small clusters from the stem and larger branches, only occasionally in the leaf axils; peduncles slender, pale green, flexible, subfurfuraceous but when old nearly glabrous, 1 dm long or shorter, usually few to severally clustered, branched well above the middle, the larger branchlets rebranched, brown tomentose at the point of branching and provided with a pair or more of short similarly hairy bracts; pedicels recurved, 5 to 15 mm in length, subtended by a pair of subpersistent bracteoles; calyx composed of 5 segments, all more or less united at the base and persistent; outer segments 7 mm long by 5 mm wide, elliptic, broadly rounded at the apex, with several parallel nerves, pubescent or puberulent on the exposed dorsal side, the middle region coriaceous, marginal portion membranous and very finely ciliate, the inner 3 to 4 broader and relatively longer, subpetaloid especially the marginal region, imbricately folded upon the ventral surface, entirely glabrous; corolla pure white, glabrous, 1 cm long or longer, 7 mm wide above the middle, the basal portion connate and forming a short broad tube, the broad apical margin irregularly rugose or lobulate, obscurely obcuneate; stamens many, inserted upon the basal portion of the corolla and falling with it; filaments 3.5 mm long, flattened, linear, glabrate; anthers nearly as long, oblong, lobed at the apex, base truncate, attached on the back below the middle, dorsally curved, introrse and laterally dehiscent; ovary flat, cone shaped, glabrate or when young puberulent, 5-celled; styles 6 mm long, slender, glabrous except the basal 1.5 cm long united portion, 5, terminated by capitate stigmas. Berries 1.25 cm in diameter, 5-rugose, whitish green, compressed globose; seeds very numerous, brown, usually triangular in shape, 1 mm long, coarsely pitted, imbedded in clear viscid juice.

Type specimen number 13408, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Discovered this large leafed and succulent *Saurauia* in loose gravelly wet ground near a streamlet winding its way down over sandstones in a cool and solidly shaded gulch at about 500 feet altitude. "Migadon" in Manobo.

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Saurauia urdanetensis Elm. n. sp.

Suberect tree or shrubby; stem crooked and irregularly round, 2 dm thick, 7 m high at least, branched from below the middle; main branches widely spreading, repeatedly rebranched, horizontal or descending; wood soft and pulpy, very white, quite without odor or taste; bark cinnamon brown, scaling in granular plates; twigs very slender, crooked, tips ascendingly curved, the green young portion brown when dry and spinescently scaly. Leaves leathery, flat, mostly horizontal, dark green above and well sprinkled with spinescent hairs, much paler beneath and similarly spiculate hairy especially along the midrib and nerves, curing blackish brown above and deep brown beneath, more or less elliptic in shape, terminated in a very short acute point, broadly rounded at the base, entire margins hispidly ciliate, alternate and chiefly toward the ends of the branchlets, 1.5 to 3 dm long without the petiole, 1 to 1.5 dm wide at the middle, with small intermixed ones only 7 cm long, young leaves and bud bracts densely covered with reddish brown hispid hairs; petiole 1 to 4 cm long, stout, succulent, pale green though nearly black when dry, densely hispidly brown scaly when dry, obscurely flattened; midrib prominent and densely brown hispid beneath, nearly plane above; lateral nerves 12 to 15, with ascendingly curved hairs, tips strongly curved and more or less united, similar to the midrib in prominence and vestiture, cross bars rather numerous and quite evident from beneath. Inflorescence hanging in small clusters, chiefly from the stem and larger branches, frequently axillary, the individual ones varying from 5 to 15 cm long, few branched from above or from below the middle and in subwhorls, all the stalks pale green and turning reddish brown when exposed, appressed hispidulous, glabrate when old, lower or larger branches relatively long and divaricately spreading, rebranched toward their ends; pedicels as well as the branchlets subtended by acute to acuminate subpersistent bracts, yellowish brown tomentulose besides the spicular hairs; flowers odorless, the petals with stamens early falling, pendulous; pedicel 1 cm long or longer, bristly hairy; sepals almost free, averaging 1 cm long; the outer 2 or 3 only sparingly setosely strigose on the back, broadly ovate, acute or obtuse at the apex, rigidly coriaceous; the inner 2 or 3 more elongated, smooth except the outer exposed portions, thinner in texture, apex subtruncate; petals white, glabrous, imbricate, 1.25 cm long, 8 mm wide above the middle, membranous, obcuneate in outline, apex truncate and emarginate or even notched, easily falling; stamens many, inserted upon the inner basal portion of the corolla segments; filaments compressed, widest across the contiguous bases, subequal in length, glabrate; anthers introrse, nearly as long as the filaments, oblong, flattened, in the dry stat more or less rugose and the obtuse to obtusely truncate ends strongly curved upon the dorsal side, dorsifixed below the middle; ovary very flatly conical, glabrous, obscurely 5-rugose, 4 mm across; styles likewise glabrous, 5 mm long, 5 in number, somewhat curved, the basal 1.5 mm united, bearing minute stigmas; ovules indefinite in each of the 5 cells.

Type specimen number 13638, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Discovered in a deep pocket of a wet ravine on the east side of the ridge between Duros and Cawilanan peaks at 3500 feet altitude and in the vicinity of the spring. The Manobo name is "Liwoyosan."

55 **Tetracera obliquinervia Elm.** n. sp.

Scandent and sprawling; stem at the top 1.75 cm thick, terete, flexible though very tough; the yellowish white slightly sweet wood with distinct radial lines; bark gray, scaling in thin plates; branches repeatedly branched, the free ends drooping; twigs divaricate, rigid and relatively short, the young green and glabrous portion turning brown when dry. Leaves very slightly roughened on both sides, alternating, the average of the larger lamina 13 cm long by 7 cm wide across the middle, elliptic, broadly obtuse or rounded at the base and at the apex or rather short and abrupt, the entire margins somewhat curved upon the nether or paler green surface, curing greenish on the shining upper and brownish on the lower sides, frequently the terminal ones much reduced, chartaceous, glabrous, nearly flat; midrib very pronounced beneath, impressed along the upper side, curing brown and in the young state sparsely strigose; lateral nerves 11 to 13 pairs, very oblique, straight, equally pronounced beneath and impressed above, also strigose, tips ascendingly curved and terminating in the leaf edges, similar in color to the midrib when dry and yellowish green when fresh, cross bars very obscure; petiole 1 to 1.5 cm long, deeply and widely caniculate, dark brown when dry, ultimately glabrate. Flowers all gone. Infrutescence terminal or from the uppermost leaf axils, paniculate, 1 to 3 dm long, 1.5 dm wide at the base, branched from below the middle and at or toward the base provided with small leaves; branches alternate, divaricate, dirty brown puberulent, rebranched from near the base, when fresh pale green as is also the subterete rachis which upon drying turns deep brown and ultimately nearly glabrous; branchlets comparatively short, similarly spreading, finely pubescent even in the fruiting state; fruits subterete, 1 cm long, ovoidly oblong, 1, 2 or even 3-carpellary, laterally dehiscent along the inner side or angle, mucronately pointed at the apex, subtended at the base by the persistent 5 calyx segments; pedicels 3 to 5 mm long, subolivaceous pubescent, persistent, a trifle enlarged at the distal end and often bracteolate; segments thick and rigid, 5 mm long, glabrate when old except the ciliate edges, elliptic; carpels dry and leathery, brown when dry, glabrous, shining especially on the outer side, more or less twisted and finely striate longitudinally; seeds subpersistent after the carpels have opened, at first yellow but finally dull miniatus red, shining black or nearly so when dry, 3 mm long, subellipsoid.

Type specimen number 13862, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Gathered among jungled woods along the stony ridge between Duros and Cawilanan peaks at 3500 feet altitude. The Manobo name is "Balau-balau."

Less pubescent and carpels without the elongated beak of *Tetracera rigida Blm.* Our leaves are also larger, with their lateral nerves straight and more oblique than those of *Tetracera borneensis Miq.* and with which my flowering specimen number 9202 from Lucban should be carefully compared.

Wormia luzonensis Vid. *Merrill* in Philip. Journ. Sci. I, 95, 1906.

Represented by number 12906, *Elmer*, Puerto Princesa (Mt. Pulgar), Palawan, March, 1911.

During recent years *Vidal's* species was classified as a *Dillenia*, but it now appears that the common *Wormia* of

Palawan is *Vidal's* species. My own collection from Palawan was sent out under a new name of *Wormia*. The flowers of both genera are the same but the fruits are entirely different. Both of our endemic species of *Wormia* have yellow flowers and we know by their fruits to belong to this genus. *Dillenia mindanaensis Elm.* is the first species we know in the Philippines with yellow flowers. Old inflorescences of *Wormia* can be distinguished from that of *Dillenia* by the slender elongated more or less zigzag stalk, in the Palawan specimens often reaching a yard in length.

EBENACEAE

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Diospyros hypoleuca Elm. n. sp.

Middle sized tree or larger; trunk 6 dm thick, 16 m high, terete and straight, somewhat wadded toward the base, forming a fine bole; wood yellowish tinged, upon exposure turning bright yellow, moderately soft, tasteless, with a faint unpleasant odor; bark dull brown, scaling in small plates, otherwise yellow or of the wood color; branches mainly toward the top, spreading, ultimately laxly rebranched; twigs dull green, slightly ascending, glabrous, drying dull brown. Petiole alternate, very pale green, of the same color as the twigs in the dry state, glabrous, deeply caniculate along the upper side, 1 to 1.5 cm in length, usually with a bud or an old fruiting pedicel in their axils; blade ovately elongated, descending, glaucous white beneath even so in the dry state, flat or shallowly curved upon the upper bright deep green surface, submembranous, edges subentire or obscurely apiculate and subinvolute in the dry state, the marginal portion finely wavy or rugose, the average ones 1 dm long by 4 cm wide below the middle, obtusely rounded at the base, gradually extended into the acuminate apical more or less recurved point; midrid drying deep brown, grooved along the upper side; lateral nerves 5 to 7 on each side, very oblique, nearly straight, relatively faint, their tips anastomosing, reticulations numerous and quite evident from both sides under a lens. Flowers not seen. Fruits solitary or seldom in pairs from the lower leaf axils or from the axils of the scars, pendant, flatly globose, 2 cm across, glabrous, smooth and shining, luteus, the immature ones ovoid and mucronately pointed, upon a short thick recurved usually persistent pedicel, subtended by a flattened glaucous green calyx plate 1.25 cm across; this plate in the younger state was short hairy on the outside and obscurely 4-lobulate.

Type specimen number 14203, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

On a forested ridge at 5000 feet altitude along the trail between Cawilanan peak and lake Danao. Rare! Several of the common Philippine species of *Diospyros* are called "Camagon" throughout the islands and this alpine species the Manobos also called by the same name.

A very close match of the type of *Diospyros brideliaefolia Elm.* which is in young flower only, yet there are indications of specific differences. The late *C. B. Robinson* concurred with me in this opinion.

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Diospyros urdanetensis Elm. n. sp.

Small or medium sized tree; stem 3 dm thick, 10 m high, terete but crooked, crookedly branched from above the middle; wood rather soft, light in weight, white or with a faint yellow tinge, odorless and without taste; bark blackish brown, hypodermis testaceus, inner side yellowish white, surface rough; branches minutely lenticelled, crookedly rebranched and horizontally spreading; twigs lax, glabrate, blackish brown when dry. Leaves similarly spreading, submembranous, much paler green on the puberulent under side, glabrous above, curing brown on both sides, exceedingly variable in size, alternate, gradually tapering to the acuminate recurved and usually subfalcate tips, obtuse or obtusely rounded at the base, the larger ones 2.5 dm long by 8 cm across the middle, usually smaller and the smallest ones only 3 by 7 cm in size, oblong; midrib prominent and puberulent beneath, caniculate above; lateral nerves 8 to 13 pairs in the average ones, ascendingly curved especially toward their ends, also prominent and puberulent beneath, tips interarching or more commonly reticulately united, cross bars or reticulations coarse; petiole grooved above, glabrous when old, 7 to 10 mm long; bud bract sharply pointed, 1 cm long, pubescent. Inflorescence clustered in the axils of the old leaf scars or occasionally scattered along short leafless branches; flowers several, arising from a common short ligneous tubercle; pedicels 3 to 5 mm long or less, strigose, subtended by numerous similarly hairy short blunt bracts; calyx rotately spreading in flower, 4 mm across, 4-lobed, united below the middle into a short thick pedicel; lobes 2.25 mm long, coriaceous and especially thickened toward the base in the middle region which on the dorsal side is strigosely pubescent, about as wide across the truncately rounded apex, apical margins much thinner and glabrate on the outside, edges finely ciliate; corolla early falling, barrel shaped, 6 mm long, 3.5 mm thick across the middle, each end short tapering, 4-segmented at the apex, glabrate or pulverulent on the exterior, glabrous on the interior, coriaceous; lobes 1.5 mm long, a trifle wider, broadly obtuse and bluntly pointed at the apex, auriculately constricted at the base, margins twisted; stamens 8, all equal and fertile, with 4 alternating and 4 opposite the segmented divisions; filaments fleshy, glabrous except the puberulent edges toward the distal end, flat, linear, at least 0.75 mm wide, 2.5 mm long, inserted upon the basal portion of the corolla and falling with it; anthers double, basifixed, triangular, acute toward the apex, the upper one 1.5 mm long, the other 0.5 mm shorter and inserted a trifle below the outer or upper one, the cells separated at the base; ovary 1.5 mm across, glabrous, rugosely flattened, with a short blunt central point, sessile. Young fruits ascending or divaricate, chiefly lateral, solitary or in small clusters, castaneus brown but with lighter brown hairs, ovoid, apiculate at the apex, with age entirely glabrous; persistent calyx velvety, deep brown pubescent, the 4 lobes subreflexed and their sides curved upon the dorsal side; pedicel very short and thick.

Type specimen numbers 13435 and 13466, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

The first number or the flowering material was collected in a fertile densely forested flat at 500 feet above the sea; the other number with young fruits was found in a very damp flat along the Catangan creek at 1250 feet altitude. The former was called "Malinoog", the latter "Camagon" by the same Manobos.

Related to *Diospyros everettii Merr.* and to *Diospyros fasciculiflora Merr.* Leaves of our proposed new species distinct from the first named, the fruits differing from the last.

Diospyros viridifolia Elm. n. sp.

Small upright tree; stem 3 dm thick, 12 m high, crooked, subterete and wadded toward the base, chiefly branched at the top; wood quite hard, white and only slightly tinged with yellow throughout, odorless and tasteless; bark dark brown or nearly black, checked, yellowish brown except the surface, that portion on the branches smooth yet with the dark grayish brown color; twigs rigid, numerous, ascending or horizontal, glabrous, drying nearly black. Leaves alternatingly scattered, numerous, similarly spreading, conduplicate, the acute to acuminate apex recurved, deep green but slightly paler beneath, remaining green on both sides in the dry state, lucid above, glabrous, oblong, base broadly obtuse or subrounded, variable in size, submembranous, entire, the larger ones 15 cm long and one third as wide across the middle; midrib prominent beneath, deeply grooved above, brown when dry; lateral nerves 7 to 11 pairs and with secondary ones between, subdivaricate, nearly straight or ascendingly curved toward their ends, terminating into coarse reticulations, other reticulations also prominent from both sides; petiole 1 cm long or more or less, reddish brown in the dry specimens, flattened along the upper side, glabrous. Fruits mainly axillary, divaricate or descending, hard, dark green, solitary or more frequently few clustered from the ends of the stout ligneous 5 to 8 mm long stalks, ovoidly globose, 2.5 cm long, normally 4-celled and 4-seeded; calyx squarrose, also dark green and glabrous, 1.25 cm across, the sides of the 4 lobes much curved upon the under side but not especially thickened; pedicel recurved, very short and thick.

Type specimen number 13460, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Of this "Camagon" as the Manobos call it, the writer found only one tree in moist fertile soil of dense woods at 750 feet above sea level.

Very similar to my number 9246 published under *Diospyros reticulata Elm.* and now known under the name of *Diospyros curranii Merr.* The fruits of our new species are larger and entirely glabrous, the leaves are more membranous and drying green.

ELAEOCARPACEAE

60 **Elaeocarpus megacarpa Elm.** n. sp.

A middle sized tree or smaller in stature; stem 2.5 dm thick, 12 to 15 m high, terete but crooked, more or less wadded at the base, chiefly branched toward the top; wood odorless and tasteless, white or nearly so, soft; bark relatively thick, smooth, grayish white mottled, isabellinus otherwise; main branches spreading, crooked, not numerously rebranched; the suberect twigs slender, 1.25 cm thick, the apical portion densely isabellinus tomentose, roughened with the old leaf scars. Leaves alternatingly crowded, also ascending, nearly flat, the short abruptly obtuse apex recurved, subchartaceous, only slightly paler green beneath, equally drying on both sides, 2.5 dm long, 8 cm wide above the middle, obovately oblong, the basal one half narrowly or slenderly panduriform, glabrous, very bluntly crenate, serrate excepting the entire basal portion; petiole broadly flattened, isabellinus canescent on both sides; midrib ridged beneath, plane above, toward the base on both sides canescent, otherwise glabrous; lateral nerves about 15 pairs, the basal few pairs short, oblique, forked and coarsely reticulated toward their ends, likewise prominent beneath, cross bars and fine reticulations quite evident from the lower side. Inflorescent spikes chiefly clustered beneath the foliage, profuse, ascending and usually curved, 10 to 14 cm long, flower bearing from near the base though more numerous toward the distal end, short isabellinus tomentose; pedicels 3 to 5 mm long or longer, similar in color and hoariness to the rachis, recurved, subtended by a shorter ovate subpersistent bract which is nearly glabrous on the ventral side; bud ovately elongated, 1 cm long, 4.5 mm thick across the base; segments 5, leathery, united at the base, lanceolate, valvate in the bud state, acuminately pointed, olivaceus tomentose on the back only; petals also 5, erect, 1.25 cm long, yellowish appressed hairy on the back, cuneately oblong, unequal in width, the middle basal portion coriaceous; the margins toward the apex membranous, the wider ones usually 3-lobed at the truncate apex, the lobes again dissected into linear segments, giving it a fimbriate appearance, when young imbricate; stamens numerous, erect, unequal, all united at the base into a cartilaginous ciliated rim; filaments of the average ones 1.5 mm long, glabrous, twice as thick below the middle; anther very linear, 4 mm long, likewise glabrous, transversely slit at the apex, the outer or dorsal portion extended into a slender 2 to 3 mm long minutely scabrid awn; ovary 5 mm long, about one half as thick, ovoidly elongated, densely pubescent, gradually extended into the equally long spinescent style which at the base is more or less hairy; stigma minute. Fruit pendant, 7.5 mm long, 4 cm thick, hard, smooth, perfectly ellipsoid, at the base subtended by the 5 densely fulvus hairy glands, dark green and minutely spotted with lighter green or yellowish spots.

Type specimen number 14059, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Collected on a densely wooded ridge near the spring between Duros and Cawilanan peaks at 3500 feet elevation. "Sala" or "Salac" in Manobo.

Leaves and flowers similar to *Elaeocarpus monocera Cav.*

ERICACEAE

Diplycosia urdanetensis Elm. n. sp.

Epiphytic and shrubby; stems few from the same cluster, mostly descending, 1 m long or longer, rather sparingly branched; wood white, rigid and covered with a smooth dark brown bark, the younger portion of the twigs glabrous, old branchlets roughened by the large leaf scars. Leaves numerous, drying dull brown on both sides, glabrous, marginal portion curved upon the nether side, entire or subentire above the middle, horizontal or descending, obtuse at both ends or acute and mucronately pointed at the apex, oblong or occasionally obovate, the larger ones 7 cm long with the petiole, 2.5 cm wide across the middle, the smallest ones broadly oblanceolate, shining and nearly black in the dry state on the upper surface, dull brown beneath; midvein straight, prominent beneath, caniculate above; usually only one pair of lateral veins arising 8 mm from the base, ascending, curved and connivent into the apex; petiole at least 5 mm long, thick, glabrate, caniculate above, reddish brown on the dry specimens. Flowers in small axillary clusters; slender pedicel slightly recurved, whitish, 1.33 cm long, glabrous, its distal end expanded into a saucer shaped disk 2.5 mm across and whose truncate edge is minutely ciliate; calyx 3.5 mm high, cup shaped, rigidly coriaceous, glabrate, the basal two thirds united, the apical portion terminated into 5 rather broad teeth whose apices are mostly acute, the outer marginal portion of the teeth puberulent; corolla greenish white, 4.5 mm long, the 5 segments contiguous in the bud state, ultimately free and oblong, glabrous, obtuse at the apex; stamens 10, included, becoming exposed by pushing off the corolla, inserted upon the basal inner portion of a glabrous irregularly lobed or pointed rim; filaments 2.5 mm long, also glabrous, compressed and widened toward the base; anthers erect, basifixed, nearly as long, auriculately lobed at the base, gradually tapering to the blunt apex, on the inner side apparently with a pair of linear sac-like extensions from above the middle to nearly the base; ovary subglobose, 2 mm in diameter, glabrous and almost black in the dry state, obscurely rugose; neck at least 3 mm long, straight, glabrous, terminated by a minute stigma.

Type specimen number 13800, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered in the stunted moss laden summit woods of mount Urdaneta at 6500 feet elevation. "Minamol" in Manobo.

From *Diplycosia trinervia Elm.* it differs mainly in its glabrous or nearly glabrous not setose character; from *Diplycosia merrittii Merr.* in having thinner more elongated trinervous leaves; and from *Diplycosia calelanensis Elm.* by the slender or longer pedicels and distinctly pointed leaves.

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Vaccinium agusanense Elm. n. sp.

An epiphytic shrub; stems few, widely scattering, crooked, only sparingly rebranched, 2 cm thick and terete at the base; wood tough and hard, dingy white; bark smooth, light gray on the stem, deep brown on the branchlets; young twigs reddish brown when dry and glabrous. Leaves conduplicate, copious, alternate, usually with buds in their axils, the terminal ones somewhat reduced, the basal lamina 1 dm long by 4 cm wide a trifle below the middle, the entire edges subinvolute in the dry state, glabrous, lucid on the upper side, curing brown, the slender acuminate apex recurved and frequently subfalcate, broadly obtuse or rounded at the base, ovately oblong, the smallest ones broadly lanceolate; veins 3 to 5, the middle one most prominent beneath and caniculate above, the lateral ones arising within 1.5 cm of the base, occasionally the upper one arising from near the middle, all subparallel, cross bars and reticulations few and faint; petiole 5 to 8 mm long; spike glabrous, stout, turning black while drying. Young infrutescence from the terminal leaf axils, ascending, 7 to 10 cm long; spike glabrous, ridged and light brown in the dry state; pedicels similar, 1 cm long, alternatingly scattered from the base, recurved, articulated at the base and leaving large notched scars after falling; calyx saucer shaped or discoid, 1.5 mm deep and 4 mm wide across the truncate rim, hard, obscurely rugose, puberulent especially around the rim; corolla yellowish tinged, subcoriaceous, glabrous, united, broad and truncate at the base, narrower and only 2 mm thick across the truncate apex which is irregularly toothed, around the side more or less rugose, falling as a whole; stamens 10, inserted above the middle of the ovary and strongly bent over it; filament expanded and subglabrous at the base on the upper side, otherwise long hairy, 2 mm long; anther 1 mm long excluding the horns, oblong, truncate and emarginate at the base, frequently 2-pointed at the apex, attached on the back above the middle and which point is provided with a pair of linear ascending spurs 0.66 mm in length; ovary one half imbedded, the upper portion flatly rounded, glabrous and rugose, 4 mm across; the strict terete styles 3 mm long, glabrous, bearing a terminal stigma.

Type specimen number 13765, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Gathered from moss laden limbs of large trees in the wet windy summit region of mount Urdaneta at 5750 feet altitude. The vernacular name according to the Manobos is "Duligagan."

EUPHORBIACEAE

63 **Acalypha subcinerea Elm.** n. sp.

Shrub-like; stem solitary or few from the same base, upright or nearly so, 2 dm thick, 7 m high, crooked and subterete, branched all along from below the middle, the ultimate ones slender and widely spreading; wood soft, pale white, quite odorless and tasteless; bark smooth, mottled, yellowish white except the epidermis; twigs green, suberect, breaking with a snap, the young portion light ashy gray pulverulent, tips more or less angularly striate, older portion subterete. Leaves alternatingly crowded toward the ends of the branchlets, mostly horizontal, curved upon the upper slightly greener surface, thinly coriaceous, drying greenish brown on both sides, ovate or ovately elliptic, the old ones glabrate or strigosely hairy and minutely punctate on the upper side except along the finely pubescent or puberulent veins, beneath short cinereous pubescent, the larger lamina 11 cm wide below the middle, 15 cm long, broadly or truncately rounded at the base, broadly and short obtusely rounded at the apex, margins entire or rugulose and obscurely crenate; midvein straight and conspicuous, straw brown; lateral veins usually of 6 pairs, 2 pairs arising from the base, the basal one of which is much less conspicuous and runs nearly parallel with the basal margin of the leaf blade, the upper one of the basal pairs most conspicuous and with 4 or 5 secondary nerves scattered along the under side, the other pairs much ascending and only slightly curved, all of the same color as the midvein and usually with hairy cushions in their axils, cross bars numerous beneath and also evident from the upper surface; petiole 6 to 10 cm long, terete, straw brown when dry, short cinereous at least in the early state. Spikes horizontal or subpendant, green when fresh as are also the leaf stalks, very slender and cinereous, solitary or few clustered from the upper leaf axils, 8 to 20 cm long, flower bearing fron near the base; buds ovoid, woolly pubescent; pistillate flowers sessile, subtended by a rather thick apiculate externally pubescent bract; perianth flat, cup shaped, 1.5 mm across, united below the middle, divided into 3 triangularly acute segments, externally pubescent, glabrous on the inner side; ovary subcinereous, ovoid, 1 mm long or longer; stigmas grouped into 3 parts, repeatedly branched from near the base and along the inner side, glabrous except the main branch toward the base, spreading. Fruits flatly globose, 4 mm in diameter, cinereous, bearing the persistent perianth and stigmas, vertically 3-creased, loculicidally dehiscent and partly septicidal, 3-celled; seeds 3, adhering to a central placenta, obovoidly globose, their sides veiny, unequal in size, 1.5 to 2 mm thick.

Type specimen number 13329, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Found in wet fertile earth in a flat of secondary woods at 500 feet above ocean level. "Alum" in Manobo.

Very near to *Acalypha cardiophylla Merr.* but our specimens are distinctly cinereous, giving it a very characteristic appearance in the field. There are also other differences.

Antidesma agusanense Elm. n. sp.

An upright shrub; stem 5 cm thick, 3 to 4 m high, terete, somewhat crooked, branched from the middle; wood whitish, rather hard, without odor or taste, reddish toward the heart or center; bark very dull brown, smooth or minutely checked; main branches divaricate, laxly rebranched, the young portion of the twigs glabrate. Leaves alternate, submembranous, horizontally spreading, flat, only a trifle darker green on the upper side, glabrous, curing unequally green on the upper and lower sides, diverse in size, entire, base cuneate to broadly obtuse, abruptly acute to acuminate or occasionally only sharply pointed, the larger leaves oblong, 15 cm long by 5.5 cm wide across the middle, the smaller ones obovately oblong; petioles 5 mm long, grooved above, glabrous, deep brown when dry; midrib quite prominent beneath, nearly plane on the upper surface; lateral nerves 5 to 7 on each side, ascending and curved especially toward their interarching tips, forming a submarginal vein 5 mm from the edge, cross bars and reticulations very faint; stipules not seen. Flowers out of season. Spikes green, glabrous, ascending or horizontal and recurved, very slender and flexible, solitary or in pairs from the leaf axils or terminal, 5 to 8 cm long, occasionally branched from below the middle, bracteate at the base, fruit bearing from near the base; pedicels divaricate, fine, 3 to 5 mm in length, strict, subtended at the base by a bract vestige; fruits glabrous, whitish, then roseus and finally atropurpureus, globose, juicy, 5 to 6 mm in diameter in the fresh state, bitterish sour, compressed, obscurely and coarsely reticulate in the dry state.

Type specimen number 13549, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Collected in rich ground of a densely forested flat at 750 feet above sea. In Manobo "Mataindo."

To be compared with *Antidesma nitidum Merr.* and *Antidesma leptocladum Tul.*

Antidesma obliquicarpum Elm. n. sp.

A small tree; stem 2.5 dm thick, 8 m high, widely branched above the middle; wood sappy white, moderately soft; bark yellowish brown, more or less scaling, reddish beneath the epidermis, lenticelled on the branches, the young ascending tips yellowish brown puberulent in the dry state. Leaves coriaceous, deciduous, slightly paler green beneath, nearly flat, alternate, diverse in size, oblong to subelliptic, apex abruptly obtuse or merely rounded, the entire margins subinvolute in the dry state, glabrous, curing dull brown on both sides, base either broadly rounded or broadly cuneate to obtuse, the few larger blades 18 cm long by nearly one half as wide across the middle, the more numerous leaves elongated and only one half as large; petiole 8 to 18 mm long, terete, only very minutely grooved along the upper side, yellowish brown or gray and glabrate in the old ones; midrib deeply channelled on the upper surface, strongly raised beneath, glabrous; lateral nerves 6 to 8 pairs, oblique, tips faint though distinctly interarching, also prominent beneath, cross reticulations obscure; stipules not seen. Flowers not found. Young infrutescence green, erect or ascending, terminal or subterminal, alternatingly clustered, usually leaf subtended, 5 to 10 cm long, paniculately branched from below the middle; branches puberulent, ebracteate, not rebranched, the ultimate ones fruit bearing from near the middle; pedicel 1 to 2 mm long, minutely pubescent, slightly thicker toward the distal end; subtended by bracts; persistent bracts ovate or orbicular, 0.75 mm long, short hairy; calyx segment subpersistent, 1 mm long, sparsely hairy, ovate and with acutely pointed tips; young carpels less than 5 mm long, oblique though subterete in the fresh green state, compressed and rugose or coarsely nerved in the dry state, glabrous or pulverulent; stigma persistent, of 2 short and recurved lobes, inserted on the lateral edge at about the middle of the fruit.

Type specimen number 13277, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Collected in humus covered compact red soil on a steep ravine near the forested ridge at 1250 feet altitude. Called by the Manobos "Hotot."

Apparently nearest to *Antidesma mindanaense Merr.* but inflorescence of ours always paniculate, calyx not as distinctly lobed and pistils more lateral.

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Antidesma urdanetense Elm. n. sp.

A small undershrub; stem somewhat crooked and irregularly round, 7 cm thick, 5 m high, branched from the middle; wood heavy, hard, nearly avellaneus, brittle, odorless and tasteless; bark very thin, smooth and yellowish white; main branches ascending, repeatedly rebranched; twigs lax, also crooked, yellowish gray, the young tips dark brown puberulent. Leaves horizontal or descending, flat, lucid on both sides, alternating, the acute to acuminate apex recurved, broadly obtuse and occasionally a trifle inequilateral toward the base, the entire margins wavy, narrowly oblong or the smallest ones broadly oblanceolate, unequally brown on both sides when dry, much lighter green and glabrate beneath, exceedingly variable in size, the average ones 1.5 dm long by 4.5 cm wide at the middle region; midrib prominent and in the young state puberulent beneath, plane above; lateral nerves 7 to 11 pairs, oblique and nearly straight, their tips ascending and conspicuously interarching a few mm below the edge, more numerous toward the base, reticulations fine and equally visible from both sides; petiole 5 to 8 mm long, brown puberulent when young, thick and yellowish gray scurfy; stipule 5 mm long at least, narrow and setaceously pointed, also puberulent, deciduous. Flowers odorless, numerous above the middle, scattered below it, yellowish and with age becoming reddish tinged; spikes 1 dm long, puberulent, solitary or in pairs, few bracteate at and toward the base; ovaries short grayish pubescent, sessile, subtended by minute thin and brown glabrate bracteoles, bearing the 3 brown colored and recurved sessile stigmas. Fruiting spike twice as long, glabrate, pendant or recurved, roughened with the lighter colored scars; seeds ovate from the side view, flattish, slightly rugose in the fresh state, green, glabrous, 1 cm long or less, 5 to 7 mm wide below the middle, sessile, easily falling while drying, conspicuously reticulate or nerved on the sides when dry, curing brown or dark brown to nearly black, usually subtended at the base by the short pubescent perianth vestige.

Type specimen number 13971, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

In well drained more or less stony and humus covered soil of a steep wind swept forested slope near the summit of Duros peak at 3750 feet altitude. "Malaihan" or "Malaigan" in Manobo.

67 **Aporosa agusanense Elm. n. sp.**

A small and very slender tree; stem 8 cm thick, 7 m high, branched toward the top; wood rather soft, odorless and tasteless, dingy or yellowish white, closely grained; branches sparingly rebranched, the slender ultimate ones green and glabrous; bark smoothish, green and brown mottled. Leaves alternate along the branches, submembranous, descending, a trifle paler beneath, the dry ones remaining green on both sides, glabrous, ovately elliptic or elliptically elongated, the abruptly acute apex recurved, base broadly rounded, entire, 2 dm long without the petioles, 9 cm wide at or a trifle below the middle; midrib glabrous and stramineus in color, tips of the upper ones interarching, cross bars quite evident beneath; petiole 1.5 cm long, glabrous, green, thickened at both ends; stipule not seen. Flowers not known. Fruits in small clusters along the branchlets, subpendant, globose, 1.5 cm in diameter, melleus, glabrous, 6-ridged in the dry state, the thick carpels opening either from the base or from the apex, thereby leaving the bright subpersistent seeds exposed, 3-celled and 3-seeded; pedicels dark green, glabrate, 5 to 8 mm long, provided with minute bracts especially toward the distal end, the small perianth segments also persistent; seed nearly ruber red, its meat snow white, the inside or cotyledon portion green.

Type specimen number 13415, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Gathered in stony ground on the top of a wooded hillock at 500 feet altitude. "Haway" is the Manobo name.

Allied to *Aporosa similis Merr.* from Negros but our leaves are broadly rounded at their bases and have shorter petioles; peduncles of infrutescence also shorter.

Bridelia lauraefolia Elm. n. sp.

Small tree; stem 2 dm thick, 8 m high; sapwood white, otherwise fumosus, light, odorless, tasteless; bark brown except the smoothish gray epidermis; main branches chiefly toward the top, freely rebranched; twigs green, quite numerous, slender, short or longer, the younger ones short cinnamon brown tomentose. Leaves copious, alternate, exceedingly diverse in size, the older or lower ones usually larger, varying from 5 cm to 2 dm long and from 2 to 10 cm wide, oblong, occasionally obovately oblong or ovately elongated, apex bluntly acute or subacuminate, base broadly or obtusely rounded and frequently widely cuneate, entire, unequally brown on the 2 sides when dry, dark sublucid green and glabrous, much paler green or subglaucous beneath and usually with a very fine dark fulvus tomentum; midrib pronounced beneath and plane above; lateral nerves of 9 to 13 pinnate pairs, oblique, only their tips ascendingly curved, cross bars numerous and relatively minute; petiole 1 cm long or shorter, sparsely hairy when old. Pistillate flowers greenish or the central organs yellowish, in dense clusters from all the axils of the leaves or their scars, apparently surrounded by ciliate bract vestiges; calyx almost 5 mm long, the basal one third united and strongly constricted, otherwise nearly cup shaped, 5-segmented, subcinereous or grayish pubescent on the outside, leathery, the lobes subequal, 1.5 to 2 mm wide below the middle, ovate though subacuminately pointed; ovary completely surrounded by a rim to which the calyx is united; the truncate rim bearing 5 incurved spathulate or obovate petals or appendages, 1 mm long, finely cinereous on the dorsal side, somewhat unequal in size and shape, alternating with staminodes or sterile stamens whose distal ends appear minutely notched; ovary glabrous, ellipsoid, 1.5 mm long; styles 2, likewise glabrous and nearly as long, erect though distinctly parted, bearing expanded stigmas; pedicels of the staminate flowers 6 mm long, puberulent; sepals 5, more or less united at the base and persistent, coriaceous, 3 mm long, finely pubescent on the outside, 3 to 5-veined, widely reflexed in full anthesis; petals or petal-like appendages very minute and alternating with the calyx segments; ovary disk large, glabrate; stamineal tube erect, 1 mm long, divided into 5 radially spreading filaments, less in length, all glabrous; anther pendant or versatile, 0.75 mm long, 0.5 mm wide across the base or widest portion, obtusely rounded at the apex, roundly bilobed at the base, ovately elliptic, dehiscing along the sides; stamineal tube exceeded by an erect sterile club shaped stigma.

Type specimen number 13298 pistillate, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912; and number 411 staminate, *C. A. Wenzel*, Dagami, Leyte, September, 1913.

Here are also referred numbers 7266 and 8520 of my own distributions, the latter number from northern Luzon is nearly in mature fruit and is not quite as typical as the first cited number or younger specimens from Leyte.

Pistillate type was collected in humus covered compact soil of a densely wooded ridge at 1750 feet altitude. The natives or Manobos called it "Tanog."

Apparently distinct from *Bridelia tomentosa Blm.*

Claoxylon grandifolium Elm. n. sp.

An erect tree; stem terete, 3 dm thick, 8 m high, straight; wood soft and pulpy, slightly odorous, tasteless, white; bark gray, with tranverse ring-like markings, with a green hypodermis, the inner one half sappy white; branches divaricate, from the middle and above it, long, only few rebranched; twigs heavy, 2.5 cm thick, ascendingly curved, conspicuously marked by the old leaf scars. Leaves ascending, coriaceous, flat but sides twistingly curved toward the apex, very shining and deep green above, paler beneath, glabrous above, puberulent on the nerves beneath, densely and alternatingly crowded toward the ends of the twigs, apex usually rounded but occasionally terminated by a short point, base broadly rounded and occasionally subcordate, elliptic or elliptically elongated, subentire toward the base, otherwise crenately dentate, the blades 1.5 to 2 dm wide at the middle, 2 to 3 dm long, both sides dull greenish brown in the dry state; midrib pale green, very prominent beneath, yellowish brown when dry, puberulent; lateral nerves 9 to 13 pairs, much ascendingly curved, tips well extending toward the apex, similar in prominence and color and vestiture, cross bars numerous and rather distinct beneath; petiole averaging 1 dm long, stout, subterete, prominently grooved along the upper side, ultimately glabrate, expanded at the base, with a pair or more of yellowish gray pulverulent excrescences along the upper edge or just below the leaf margins. Inflorescent spike ascending, usually solitary from the leaf axils, striate, puberulent or short and densely pubescent, gray when dry, deep green in the fresh state, 3 to 4 dm long, with dense sessile clusters of flowers from near the base; flowers pale or greenish yellow, caducous, odorless; staminate flowers in woolly sessile clusters, slightly enlarged at the top; pedicels 5 to 7 mm long, very slender and flexuous, minutely pubescent, becoming detached at the articulate point or 1 mm from the base; this basal portion persistent and subtended by short similarly pubescent bracts; perianth 2.5 mm long, oblong, membranous, twistingly spreading, puberulent or short pubescent on the lower sides, 3-segmented, nearly free; filaments averaging 1 mm long, thread-like, hyaline, glabrous, surrounded at the base by dense hairs; anthers persistent, 10 to 15, apparently lobed from the apex toward the base, 0.25 to 0.33 mm long. Capsules not known.

Type specimen number 13872, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Gathered in rich ground of secondary woods among hemp fields along the Minusuang river at 500 feet above the sea. The Manobo name is "Balong-sogay."

Very closely related to *Claoxylon arboreum Elm.* from Leyte, but our leaves are different in shape especially so towards the base.

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Cyclostemon incarnata Elm. n. sp.

A slender and erect tree; stem terete, 1.5 dm thick, 10 m high, chiefly branched toward the top; branches spreading, crooked, not numerously rebranched; twigs ashy gray and very rigid; wood fairly heavy and hard, whitish, odorless and tasteless; bark smooth, greenish brown blotched, without latex. Leaves alternatingly scattered along the branchlets, rigidly coriaceous, horizontal, the obtuse apex recurved, glabrous, deeper green on the upper somewhat folded side, base broadly obtuse or rounded and frequently inequilateral, margins entire but rugose, oblong or subelliptic, curing dull brown on both sides, the larger ones 2 dm long by 9 cm wide at the middle; midrib prominent beneath, the larger basal portion turning black when dry, also slightly raised on the upper side; lateral nerves 5 to 7 on each side of the midrib, much ascendingly curved, similarly prominent beneath and evident on the upper side, reticulations rather numerous and more evident beneath; petiole 1 cm long, very thick and ashy gray, deeply caniculate on the upper side. Flowers not seen. Fruits mainly in small clusters from the larger branches though occasionally single from the leaf axils, pendant, globose, 4 cm in diameter, hard and very dark green, when fully mature soft and incarnatus especially the meat, apex usually provided with 2 disk-like sessile stigmas; pedicel glabrous, stout, recurved, 1.5 cm long, at the base bearing a rim-like vestige of the perianth, few to several celled but usually with 2 stony seeds only.

Type specimen number 13265, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Collected on a forested well drained ridge of compact red soil at 1000 feet elevation. Quite common and frutiferous, occasionally the ripe red fruits cover the ground under the trees. The Manobo name is "Malagsak."

Critically distinguished from *Cyclostemon megacarpa Merr.* in having thinner and less shining leaves with broader bases and whose reticulations are more prominent especially beneath.

Gelonium mindanaense Elm. n. sp.

Upright shrub or tree-like; stem 7 cm thick, 4 m high, branched from the middle or from above it; wood white on the outside, dingy in the central portion, quite hard and closely grained, odorless and tasteless; bark thin, epidermis greenish to brown, melleus otherwise; branchlets slender, widely spreading, bendable, even the young portion of the twigs terete and glabrous. Leaves alternate along the ultimate branches, horizontal or descending, flat, the obtuse to acute apex recurved, base of the larger blades broadly obtuse or obtusely rounded, glabrous, drying green on both sides, the smaller ones elongated, the larger ones subelliptic, occasionally a trifle inequilateral at the base, the larger ones 2 dm long by 8 cm wide across the middle, the smaller ones less than one half as large, the entire margins subinvolute in the dry state; petiole 5 mm long at least, glabrous, greenish brown when dry, flattened along the upper side; midrib plane above, conspicuous beneath, green to straw brown when dry; lateral nerves 5 to 8, ascendingly curved especially toward their tips, cross bars and secondary nerves few, reticulations fine and obscure; stipule not observed. Flowers in small clusters from opposite the alternating leaves, green in the bud state, melleus when in flower, suberect; pedicel 3 to 4 mm long, 1 mm thick, slightly thickened toward the distal end, glabrous; buds subglobose, 2 mm in diameter; perianth composed of 5 imbricated segments, 4 mm long, nearly as wide across the middle or below it, united toward the base, glabrous, spoon shaped, broadly ovate to elliptic, marginal as well as the apical region transparent, the inner ones a trifle smaller, edges frequently appearing minutely ciliate; stamens numerous, erect, all inserted upon a callous rim or disk; filaments glabrous, hyaline, filiform, 2.5 mm long, nearly equal; anthers yellowish, 1 mm long, ovate to oblong, notched at the base, apex obtuse, nearly basifixed. Fruits also erect, the young ones green and subtended by a yellowish green perianth, 2 cm thick, triangularly lobed, the rounded lobes costate, curing reddish brown, bearing the sessile 3-segmented and bilobed stigma, truncately rounded at the base and with a very short constriction, ruber red when mature in the fresh state; pedicel curved, stout, about 5 to 6 mm long; seeds covered with a white hilum.

Type specimen numbers 13413 in flower and 14038 in fruit, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Both numbers were collected on a dry wooded hillock 500 feet high or above the sea level. To the flowering specimen the Manobos gave "Bodung" as its vernacular name and the other was called "Magaloput."

Not *Gelonium meliocarpum Elm.* nor *Gelonium philippinense Pax* and *Hoffm.*

Glochidion mindanaense Elm. n. sp.

A slender erect tree, with a 9 m high and 1.5 dm thick stem; bark smooth, yellowish gray; wood hard and heavy throughout, reddish brown especially toward the center, only the thin sapwood whitish, without odor or taste; main branches arising from the middle, erect; secondary ones mostly toward the ends of the main branches, only sparingly rebranched, slender, divaricate, the green tips glabrous, somewhat striate in the dry state. Leaves alternatingly scattered along the branchlets, glabrous, chartaceous, slightly recurved, darker green above, curing dark or dull brown, yellowish when young, gradually tapering toward the acute or subacuminate apex, base rounded or obtusely rounded and appearing inequilateral, 17.5 cm long and nearly 6 cm wide, oblong, the lower blades much smaller and ovately oblong in shape, margins entire, midrib pronounced beneath, nearly black when dry, glabrous; lateral nerves ascendingly curved, 5 to 8 pairs, their tips anastomosing, articulations relatively prominent beneath, all dark brown and glabrous; petiole black, also glabrous, less than 5 mm in length. Flowers glomerated in the leaf axils, upon short stellately branched and recurved more or less bracteate tubercles which are very short but which in the fruiting stage become conspicuously elongated; pistillate flowers greenish and subsessile, the staminate ones yellow and pedicelled; calyx of the staminate flowers campanulate, upon slender 5 to 8 mm long glabrous pedicels; sepals elliptic to oblong, glabrous, 2.5 mm long, 1.5 mm wide across the base, the inner 3 alternating with the outer series and a trifle smaller, all imbricate; stamens in a thick central column, 1.25 mm long, the anther sacs pale yellow, exceeded by the 3 thick nearly blackish brown connective points; pistillate calyx somewhat urn shaped, 3 mm high; segments 6, imbricate and acute points outwardly curved, also glabrous, united toward the base, narrower than the staminate sepals; ovary superior, faintly pubescent, flatly globose, 1.5 mm in diameter; style 1.25 mm long, 0.75 mm thick, similarly pubescent, terminated by a circular glabrous stigma.

Type specimen number 10594, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, May, 1909.

Well up in the dense forests at 4000 feet of the southern slope of mount Calelan. This rare species was called "Obog" by the native or Bagobo.

72 **Glochidion robinsonii Elm.** n. sp.

Low and widely spreading trees; twigs short and soft olivaceus pubescent. Leaves alternatingly scattered along the slender branchlets, submembranous, curing dull brown on the upper surface and glabrous except along the nerves, beneath cinereous or tawny canescent, entire, rather abruptly acute to acuminate, the smaller ones broadly ovately lanceolate, the larger ones oblong, slightly inequilateral, base rounded, 1 dm long by 3 cm wide, frequently much smaller; midvein rather prominent beneath and cinereous, also puberulent on the upper side of the blade; lateral nerves 5 to 8 pairs, ascendingly curved, tips obscurely united, similarly hairy on both sides, cross bars close and quite evident beneath; petiole 3 mm long, cinereous. Flowers densely grouped in the leaf axils, the staminate slenderly pedicelled, greenish to yellowish; pedicel of staminate flowers 5 mm long, slender, finely pubescent; perianth segments 6, free, in 2 series; outer 3 sepals elliptic, 2.5 mm long by 1.75 mm wide at the middle, coriaceous, pubescent on the outside, nearly glabrous on the inner surface, flat; the inner 3 ovately elliptic and a trifle smaller, only sparingly strigose on the outer exposed side; stamens 1 mm long, in an erect column; filaments united into a glabrous 0.25 mm long stalk; anthers 0.5 mm long, pale yellow; connectives exerted into 3 blunt points 0.25 mm in length;

pistillate flowers subsessile; perianth segments 2 or 3, thick, obovately elliptic, pubescent especially on the outer side, curved upon the ventral side, usually provided at the base and alternating with bracts or vestiges of the inner perianth segments; ovary subglobose, 1 mm thick, densely hairy; style also 1 mm long, columnar, less pubescent; fruit strongly compressed, nearly 4 mm wide and scarcely more than one half of that in length, sparsely subolivaceus pubescent, obscurely 6-gonous, subtended by the persistent perianth and terminated by the pubescent style.

Type specimen number 11243, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Discovered in good soil among secondary forests. Named after the late *Dr. C. B. Robinson* who has done considerable work in this genus.

Clochidion subangulatum Elm. n. sp.

A burly appearing tree; stem 6 m high, 2 dm thick; the branches arising from below the middle, crookedly rebranched toward the top, forming a rather flat crown; wood moderately hard, reddish toward the center, odorless and tasteless; bark brown, scaling in plates, latericius beneath the epidermis; twigs green, horizontally spreading, glabrous, nearly black in the dry state, somewhat flattened or angular and distinctly rigid. Leaves thinly coriaceous, descending, curvingly conduplicate on the upper deeper green surface, glabrous, lucid on both sides, alternatingly scattered along the twigs, the old ones 1.5 to 2 dm long and 5 to 6 cm wide at or a trifle below the middle, ovately oblong, apex rather abruptly acute, base broadly rounded, entire, curing blackish brown; midvein more prominent beneath, glabrous; the lateral nerves 7 to 9 on each side, much ascending and curved, less prominent, cross bars and reticulations fine, the latter very obscure; petiole 5 mm long, glabrous. Inflorescence axillary, apparently only pistillate; flowers grouped upon short thick common stalks which usually curve over the upper side of the twigs, in the flowering state subsessile, distinctly pedicelled when in fruit; the individual stalks subtended by bract vestiges; female glabrous, subsessile or short pedicelled; perianth segments subequal, 3 mm long, the larger ones 1.5 mm wide, all more or less united at the base, oblong, with acutish tips, the apical portion recurved in anthesis, in the early state imbricate, in 2 series, the outer or basal ones usually larger; globose ovary puberulent, finally glabrous; style very short and thick, terminated into several apiculate teeth; fruits compressed globose, glabrous, turning reddish, 7.5 mm across, upon 3 mm long glabrous stalks, apiculately pointed at the apical center.

Type specimen number 11116, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Collected along a streamlet of light woods in a depression of the cogon formation at 1000 feet altitude.

Very near to *Glochidion angulatum C. B. Rob.* but entirely glabrous, with leaves more nerved and fruits smaller.

Homalanthus surigaoense Elm. n. sp.

A crooked shrub-like tree; stem 15 cm thick, 7 m high, terete, chiefly branched toward the top and forming a flat crown; wood pulpy, white, nearly odorless and tasteless; bark smooth and grayish white blotched; main branches crookedly rebranched; twigs numerous, green, glabrous, ascendingly curved, shining, roughened by the light gray leaf scars, with transverse markings. Leaves alternate, usually crowded toward the distal ends of the branchlets, subcoriaceous, glaucous white beneath, glabrous, pale green and shining above, entire, subpendant, when dry brown above and glaucous brown beneath, ovately orbicular, greatly varying in size, apex rounded or only obscurely obtuse, base truncately rounded, the larger ones 13 cm across either way, most of them 9 cm large only, peltate from the basal one third; petiole yellowish, green or reddish on the exposed side, varying from 5 cm to 2 dm long, terete, glabrous, at the distal end provided with a pair of glaucous green leathery and irregularly margined appendages; main nerve from the petiole to the apex of the leaf straight and prominent beneath, in the dry state glaucous dark brown; lateral ones above the petiole 7 to 10 pairs, suboblique, nearly straight, the apical ones more numerous and obscure, the basal pair

3 to 4 branched along its lower side from below the middle pairs, 2 to 3-forked above the middle or toward the distal end; the basal radiating nerve arising from and extending below the petiole, composed of 4 to 6 nerves, the lateral or upper ones are the longer and usually branched above the middle, cross bars faint though quite numerous; bud scales membranous, glabrous, 3 to 5 cm long, well imbricated and with the prominent point somewhat curved, caducous, pale green or yellowish. Flowers not seen. Infrutescent spikes erect or nearly so, solitary and terminal, averaging only 5 cm long, fruit bearing from below the middle or from near the base; rachis stout, glaucous green but nearly black in the dry state, glabrous, subterete; pedicels relatively stout, 4 mm long and at right angles with it; fruits avellaneus and 5 mm across in the dry state, apiculate at the apex, subglobose or somewhat compressed.

Type specimen number 14045, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Gathered in dry red soil mixed with stones along the wooded ridge near an old clearing in the sag at 3500 feet altitude, situated between Duros and Cawilanan peaks. The Manobos like all other Filipinos call the various species of *Homalanthus* "Bilante."

Leaves with their petioles and bud bracts twice as large as those on *Homalanthus macradenius Pax* and *Hoffm.* which is based upon my mount Apo collection. *Sr. J. F. Quadras* collected several specimens of our new species here proposed in the Surigao province.

1b

Macaranga apoensis Elm. n. sp.

Small tree; stem quite crooked, 5 m high, 1.5 dm thick, branched toward the top; wood soft, white, odorless and without taste, quite light in weight; bark easily peeling, brown, smooth; twigs quite numerous, ascending, forming a flat shaped crown, terete, dull rusty brown or toward the young tips short fulvus tomentose. Leaves submembranous, chiefly horizontal, dark green on the upper nearly flat surface, the caudate tips recurved, much paler green beneath, curing dull brown above and greenish brown beneath, truncately ovate or triangular in shape, base truncate or only a little pointed and entire, otherwise dentate or obscurely and irregularly repend, glabrous on the upper surface except along the yellowish midvein and lateral nerves, beneath pellucid gland dotted and velvety tomentose especially the young ones, exceedingly variable in size, the average lamina 1 dm long by 6 cm across the base, without basal glands at the end of the petiole, alternate and more numerous toward the ends of the branchlets; midrib straight, prominent beneath and brown puberulent or pulverulent, quite prominent; lateral nerves 5 to 7 pairs, oblique and nearly straight, the basal pair with 3 to 5 lateral branches along the lower side, the second pair fewer branched toward the distal end, the upper pairs merely forked at their ends, similar in prominence and vestiture to the midrib, cross bars quite evident and at right angles to the lateral nerves; petiole 3 to 6 cm long, terete, slender, when young fulvus puberulent, dull brown and glabrate when old. Young infrutescence axillary, strict, ascending, usually solitary, unbranched, 5 to 8 cm long, fruit bearing from above the middle; peduncle and rachis terete, slender, in the early state fulvus tomentulose, becoming dark or dull brown; pistillate flowers or young fruits solitary or few clustered, alternatingly scattered below, crowded in subwhorls toward the top of the stalk; staminate flowers not collected; pedicels finely brown scurfy in the dry state, in flower 2.5 mm long, twice as long in the fruiting state, subterete, 0.75 mm thick, slightly enlarged toward the distal end, subtended by minute bracts or bract vestiges: calyx composed of 3 more or less unequal short divaricately spreading segments, brown pulverulent on the exterior, the longest of the segments 1 mm long; fruits usually single and obscurely inequilateral, subglobose, 3 mm in diameter, bearing a large subcapitate and sessile brown stigma whose surface appears rugulose, densely covered with a light yellow glutinous coat; seed crustaceous, nearly black and covered with a thin jelly red film appearing minutely punctate.

Type specimen number 10719, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, May, 1909.

Discovered in humid woods at 3750 feet altitude, along the trail near the Baruring river along the north side. "Indan" in the Bagobo dialect.

Apparently its greatest affinity is with number 1100 *Cuming* or the type of *Macaranga cumingii Muell*. The caudately pointed and underneath pubescent leaves with crenately dentate margins are some of the distinguishing characters.

77 **Mallotus hirsutus Elm. n. sp.**

Slender and erect tree; stem 1.5 dm thick, terete, 8 m high or higher, branched from above the middle; wood rather soft, dingy white, odorless and without taste; bark smooth, greenish gray, latericius on the inner side, badius in the middle region; branches freely rebranched, the slender twigs very lax and occasionally drooping, dirty olivaceus hirsute. Leaves alternating, well scattered, membranous, flat, horizontal or descending, much paler green beneath, curing similarly dull grayish brown on both sides, the basal portions a trifle inequilateral, round at the base, apex quite abruptly acute to acuminate, oblong, usually widest across the middle or immediately above it, olivaceus, hirsute on both sides especially so along the midrib and nerves beneath, entire; petiole 8 to 13 mm long, caniculate above, densely hirsute; midrib conspicuous on both sides especially beneath; lateral nerves 5 to 8 on each side, much ascending and curved, also prominent, cross bars or reticulations faint; stipules easily falling, narrowly lanceolate, nearly 1.5 cm long or less, hirsute on the outside, subglabrous on the inner side, brown in the dry state, 3 mm wide, setaceously pointed. Flowers not seen. Capsules green, pendulous, flatly globose, spinescent, 3-celled, septicidally as well as loculicidally dehiscent, 1.5 cm across, roundly 3-lobulate, sessile; pedicel usually 1 to 3, linear to lanceolate, bracteate above the middle, very slender and densely hirsute, solitary or in pairs from the leaf axils, 3 cm long: perianth segments persistent, ovately lanceolate, 5 mm or longer, also hirsute but not on the ventral sides; carpels after separating much curved and twisted; seeds globose, 5 mm in diameter, shining brown and with a large grayish scar of attachment; stigmas 3, also persistent, spreading and recurved, 1 cm long or shorter, brown scurfy along the ventral surface.

Type specimen number 13480, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Collected in the summit woods of Duros peak at 4000 feet altitude. Here it was quite common but it was nowhere else seen. Its Manobo or vernacular name is "Masangaway."

Phyllanthus verrucosus Elm. n. sp.

Erect annual or biennial herbs; stem strict, very smooth, yellowish green or reddish brown, from 3 to 9 dm high, glabrous and angularly ridged toward their ends, the longer ones branched from near the base; roots fibrous and profuse. Leaves alternating and scattered, 3 to 7 cm long, ascending from the base though gradually recurved toward the distal end, leaflet bearing from near the base, about 20-foliate; petiole 5 to 8 mm long, glabrous, compressed and ridged; stipule 3 mm long at most, persistent, membranous, peltately attached, broadly rounded at the base and widely notched at the lower end, the upper portion setose; rachis ridged and compressed, glabrous; leaflets flat, ascending, pale green or subglaucous beneath, alternate, the average ones 8 mm long by one half as wide at the middle or above it, apex truncately rounded or broadly obtuse, the base more or less obliquely rounded, glabrous except the puberulent margins, edges entire, sessile or nearly so or upon very short petiolules, subtended by persistent setose bracts, oblong; midrib conspicuous beneath; the 4 to 6 lateral nerves equally prominent beneath, 2 pairs arising from near the base, all gracefully curved upward, tips more or less united just below the edge, reticulations obsolete. Pistillate flowers usually in pairs from the leaf axils, pendulous, usually one of the flowers more advanced than the other, sessile, subtended by a whorl of 3 very short hyaline involucral bracts; perianth likewise hyaline, less than 1 mm long, 6, united at the base, narrowly oblong, pointed or rounded at the apex, glabrous, smooth; ovary flatly globose, verrucose; stigma minute; fruit 2.5 mm wide, globose except for the flattened ends, vertically 6-creased, brown in the dry state, rather prominently verrucose when mature, bearing a sessile 3 lobulate small stigma, 3-celled, 3-seeded; seeds brown, 1.5 mm long, rugulose or transversely fluted on all 3 sides, more pointed toward the apex, sides flat, back strongly convex.

Type specimen number 13576, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

In moist black soil among river stones along the Minusuang at approximately 750 feet altitude. "Payog" in the Manobo dialect.

Closest related to *Phyllanthus benguetensis C. B. Rob.* but our leaves are narrower, fruiting calyx smaller, capsules verrucose and seeds transversely fluted not pitted.

Phyllanthus urdanetensis Elm. n. sp.

Upright and slender shrub; stem 5 to 8 cm thick, 5 m high, branched from the middle or below it; wood odorless and without taste, moderately hard, the sapwood white, the greater central mass yellowish tinged; old bark brown and roughened with excrescences, otherwise smooth, testaceus or isabellinus except the epidermis; main branches ascending, rebranched toward their distal ends; twigs horizontal or ascending, glabrous, slender, the terminal portion green but dull brown when dry, obscurely angular and usually ridged, very flexible, numerous toward the ends. Leaves copious, lighter colored beneath, alternate, similarly spreading or descending, thinly coriaceous or submembranous, drying similarly brown on both sides, the acute to acuminate apex recurved, basal portion obtuse and constricted at the base or with a decurrent-like petiole, entire, oblongish or the smallest ones broadly lanceolate, the larger ones 1 dm long by 4 cm wide at or below the middle, those on number 14163 are smaller and with subfalcate tips, slightly inequilateral and many of them are glaucous white beneath; leaf base thick, inserted upon a large notched portion of the twig; midvein prominent on both sides especially beneath; lateral nerves up to 16 pairs, with secondary ones toward the midrib and nearly at right angles to it, almost straight, very obscure though equally evident from both sides in the dry state, tips anastomosing, reticulations numerous and more evident from the nether side. Flowers odorless, pendant from the axils, usually in small clusters; pedicels of the pistillate ones less than 1 cm long but very slender, glabrous, spreading, subtended by minute bracts; perianth segments in 2 unequal series, glabrous, 6, nearly flat and well spreading in anthesis, all united at the base; the smaller 3 segments 2.25 mm long by 1.25 mm wide, oblong but with a slight constriction below the base, obtusely rounded at the apex, midvein rather evident; the 3 larger ones ovately elliptic, constricted or short clawed at the base, the midvein more evident and with visible reticulate nerves, apex broadly obtuse, entirely glabrous; ovary flatly globose, obscurely trigonous, subglabrous, inserted upon a short rimlike base, 3-celled, with 2 flattened ovules in each cell attached to the central placenta; styles compressed, fleshy, glabrous, 2 mm long, 3-parted nearly to the base; stigmas forked, a trifle shorter, divaricate and curved toward the pointed distal ends, also glabrous; staminate in dense sessile clusters; pedicels for the bud flowers less than 1 mm long, glabrous, subtended by subpersistent bracteoles; the 3 outer perianth segments free, elliptic and with a constricted callous somewhat incurved point, entirely glabrous, deeply concavo-convex; the inner 3 alternating with the outer series, nearly free, a trifle shorter, almost flat, well covering the stamens; anthers subsessile, elliptic, arranged in a globose glomerule, emarginate at the apex, obscurely bilobed at the basifixed base, dehiscing laterally along the dorsal side.

Type specimen numbers 13936 pistillate and 14163 staminate, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September and October respectively, 1912.

The first number was discovered in dry forests at 3500 feet of Duros peak and was called "Camohodan" by the Manobos. The other number was collected in humid forests at 5000 feet altitude and was named "Halong-halong" by the same natives.

FLACOURTIACEAE

8-0 **Casearia agusanense Elm.** n. sp.

Tree-like shrub or a stunted tree; stem at least 1 dm thick, about 6 m high, branched from below the middle; wood moderately hard and covered with smoothish mottled bark; limbs divaricate, rebranched, the slender ultimate ones puberulent. Leaves ample, alternatingly scattered along the branchlets, submembranous, paler green beneath, flat or only the acute to subacuminate apical point recurved, glabrous above except the grooved midrib which is puberulent, beneath soft pubescent especially along the midrib and nerves, base obtuse or truncately rounded, occasionally a trifle inequilateral, elliptically oblong, the average blades 13 cm long by 6 cm wide at the widest portion, entire around the base, otherwise crenately toothed or rather serrate, drying unequally brown on its 2 sides; petiole 0.5 to 1 cm long, puberulent at least when young, caniculate above; midrib raised beneath, sunken above; lateral nerves 7 to 9 pairs, ascendingly curved, also prominent, the 2 basal ones oblique and less prominent, tips anastomosing, cross bars and reticulations minute. Flowers not seen. Fruits mostly axillary, solitary or few clustered, upon 1 cm long or less and glabrous pedicels, 2.5 cm long when mature, 1.5 cm thick, elliptically oblong, smooth, shining, light yellow, 6-ridged in the dry state, subtended by the 5 persistent reflexed and glabrous calyx segments, 3-celled, several or more seeded; seeds grayish white when dry, smooth, 3 to 4 mm across, more or less angular and irregular in shape.

Type specimen number 13650, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Collected in stony ground of wooded banks along the Catangan creek at about 500 feet above sea level.

Although ours is in fruit only and the type of *Casearia polyantha Merr.* in flower, our leaves are not glabrous beneath and which have fewer nerves and shorter petioles.

91

Flacourtia sulcata Elm. n. sp.

A shrub-like tree; stem 1 dm thick, 5 m high, branched from below the middle, terete; wood moderately hard, heavy, turning yellowish after being exposed, quite odorless and tasteles; bark smooth and brown on the surface, yellowish white otherwise; main branches long, rebranched, the twigs rigid and dull brown, covered with numerous lighter brown lenticels. Leaves drying equally brown on both sides, alternate, thinly chartaceous, recurved toward the short acute to acuminate apex, base rounded, dull green on the upper nearly flat surface, lighter green beneath, glabrous except the olivaceus soft pubescent midrib and puberulent lateral nerves beneath, oblong, diverse in size, the larger average leaves 2.5 dm long by 1 dm wide across the middle, margins finely to coarsely crenately dentate or serrate; midrid very strong beneath, shallowly grooved along the upper side; lateral nerves 9 to 13 on each side of the lamina, ascending and usually curved, also prominent beneath and similarly impressed on the upper surface; petiole very stout, 1 cm long or less, short pubescent, widely grooved above. Flowers not known. Fruits solitary or in small cluster from the leaf axils, upon 2 mm long brown and glabrous pedicels, globose or nearly so, 1 to 1.25 cm in diameter, hard, glabrous, pale green, 4 to 5-ovuled and seeded, curing truncate at both ends and 4, 5 or even 6-ridged, turning black upon drying.

Type specimen number 14044, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered in more or less rocky though well drained soil upon the wooded ridge between Duros and Cawilanan peaks at 3500 feet altitude. "Aropag" in Manobo.

Foliage very similar to *Flacourtia euphlebia Merr.* but our material is entirely without the prominent spines on the twigs.

92

Osmelia euspicata Elm. n. sp.

A small erect tree; stem 7 m high, 1.5 dm thick; wood pale or yellowish white, quite hard, odorless and tasteless; bark yellowish gray, peeling in thin plates; main branches from the middle, divaricately spreading, slenderly rebranched, far reaching, the thin young tips cinereous. Leaves membranous or submembranous, horizontally spreading, flat or only the very short and very abruptly acute apex recurved, base usually rounded but occasionally obtuse, oblong, the average lamina 12.5 cm long by 5 cm wide though frequently smaller, entire, alternate, glabrous except along the nerves, curing greenish; midvein prominent beneath, bud strigose especially in the young state, creased on the upper side; lateral nerves 5 to 7 pairs, much ascending, also conspicuous and strigose beneath, tips anastomosing, cross bars rather fine yet plainly evident from both sides; petioles sordidly strigose, 5 to 8 mm long, not thick; stipules subpersistent, seta-like, 3 mm long, densely pubescent. Spikes pendulous, mostly from the leaf axils, green and strigosely hairy, slender, 1.5 dm long; flowers small, yellowish green, sessile, solitary or in small groups, scattered from below the middle but more numerous toward the end, subtended by a persistent bract-like rim whose basal portion is more or less hairy and whose margins are subhyaline; calyx greenish, united at the base, imbricate, 5 or occasionally reduced to 4 and then somewhat unequal, soft pubescent toward the thickened basal portion on the outside, otherwise nearly glabrous, orbicular or rotund, 2 mm long, 1.5 mm wide across the middle, deeply concave on the inner side, the overlapped margins hyaline and enclosing the inner floral organs; corolla pale yellow, united above the pistil, 1 mm deep, densely hairy, divided into 8 or 10 equal or subequal lobes, thick in texture; stamens as many as corolla segments, also erect; filaments inserted upon the sinus of the corolla lobes, 0.5 mm long, glabrous; anthers broadly orbicular, nearly 0.5 mm across, attached at the emarginate base, the sacs laterally dehiscent; pistil scarcely exceeding the corolla, densely woolly except the small flattened subentire or bilobed stigma; broadly ellipsoid in outline, 2 mm long; fruit grayish and velvety purple, submelleus when dry, 1.5 cm long, obscurely trigonous, similarly tapering at both ends, dehiscing from the apex; seed surrounded by a lemon yellow fleshy membrane or caruncle.

Type specimen number 11088, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, July, 1909.

Collected in good damp soil upon a wooded bank of a streamlet at 1500 feet altitude. The Bagobos know it as "Baringorus."

Not *Dichapetalum* and in general aspects it appears similar to some species of *Euphorbiaceae*.

53

Osmelia subrotundifolia Elm. n. sp.

An erect and small tree; stem 1.5 dm thick, terete, 8 m high, branched from below the middle; wood quite hard and heavy, odorless and without taste, yellowish throughout; bark smooth, grayish, sappy white on the inner surface; main branches horizontal, laxly rebranched, the ultimate ones slender and terete, light olivaceus pubescent or merely puberulent at the young ends. Leaves alternate, well scattered along the branchlets, descending, submembranous, much paler beneath, nearly flat, very unequally greenish on the 2 sides in the dry state, entire, base obtusely rounded or truncately rounded, apex rounded or more frequently subtruncately rounded and terminated by a narrow rather sharp point 5 to 8 mm in length, elliptic or rotund, 10 to 15 cm long without the petiole, 5 to 8 cm wide at the middle or a trifle below it, glabrous except the veins beneath; petiole 6 mm long or the longest ones twice that length, subterete, olivaceus short pubescent, ultimately glabrate; midrib conspicuous beneath, similar in vestiture except the glabrous and slightly impressed upper side; lateral nerves 6 to 9 pairs, ascendingly curved, conspicuous and puberulent beneath, 2 pairs arising from near the base, the basal one of which is the smallest pair, only the very tips coarsely interarching, cross bars minute yet quite evident from beneath. Spikes axillary or lateral, pendant, solitary, flexible, from 1 to 4 dm long, very slender, only occasionally branched, fruit bearing from below the middle, puberulent, the peduncle portion occasionally short bracteated; capsule alternatingly scattered, upon 3 to 5 similarly pubescent and similarly colored pedicels, subpendant, the larger ones 1.5 cm long, angularly ellipsoid, murinus gray but dull sulphureus in the dry state, normally dehiscing into 3 carpels from the apex toward the base, rather thick and transversely wrinkled on the dry ones, the inner side tinged with atro-violaceus; the seeds as many as there are carpels, surrounded by a luteus fleshy membrane.

Type specimen number 13543, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Discoverd in moist ground of a densely forested flat at 750 feet altitude.

Possibly only a broadly rounded variety of the preceding.

Quadrasia Elm. n. gen.

Shrubs or small trees with alternate leaves; flowers strictly dioecious; calyx 3 to 4 but usually 4-segmented; pistillate flowers with a fringe or crown of petals which are absent in the staminate flowers; stigma fimbriate along the upper side of the 4 to 5 reflexed segments; stamens numerous, free, intermixed with bristly filamentous appendages; ovary sessile, bearing 5 reflexed styles, 4 to 5-celled but usually only 4-celled.

Apparently related to *Bennettia Miq.* but fruits in ours with one or two more cells and each cell one-seeded, not with two or more seeds; styles also more numerous and stigma not at all capitate nor two parted; fruit tardily dehiscent, not berry-ike as *Miquel's* genus and our staminate inflorescence is always spicate.

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Quadrasia euphorbioides Elm. n. sp.

A small tree-like shrub; stem 3 to 4 m high, 7.5 cm thick, branched from the middle; wood dingy white, rather soft, odorless and tasteless; bark yellowish, with lighter colored excrescences arranged longitudinally; branches laxly rebranched and spreading, the tips ascendingly curved and suberect, the young portion short but densely umber pubescent with light colored lenticels. Leaves slightly roughened on both sides, alternatingly clustered toward the ends of the twigs, descending, subcoriaceous, submembranous when dry, paler green beneath, drying greenish brown, glabrate, entire toward the broadly obtuse or rounded base, otherwise finely apiculate, apex short acute, variable in size, elliptically oblong or ovately so, the average blades 2 dm long, 9 cm wide across the middle, with a pair of minute glands at the base; midrib pronounced beneath and faintly puberulent, plain above; lateral nerves about 6 pairs, much ascending, the upper ones more curved especially toward their ends, greenish and minutely hairy, rather conspicuous; the cross bars and coarse reticulations also conspicuous; petiole 2 to 8 cm long, ascending, subterete, green, faintly strigose. Pistillate inflorescence spicate, 1 cm long, axillary or from the lower axils of the fallen leaves, strict, suberet; peduncle solitary, stout, olivaceus short pubescent; flowers sessilely clustered toward the distal end; male spikes mostly from the fallen leaf axils, slender, usually solitary, 1 dm long, similarly pubescent, the flowers alternatingly scattered from near the base; pedicels of staminate flowers strict, ascending, soft pubescent, usually in small clusters yet only 1 coming to anthesis at a time, 3 mm long, subtended by a whorl of blunt and similarly pubescent bracts; buds small, globose, subsessile; perianth of 3 or 4 segments, united at the base, widely spreading and reflexed in the flowering state, elliptic or oblongish, 3 mm long, 1.5 mm wide, softly pubescent on both sides but especially on the outer side; stamens numerous, inserted upon the central portion of the perianth, cremeus; filaments filiform, glabrous, unequal, the longer ones 1 mm long, more or less united at the very base into small groups, interspersed with short sterile filaments which are ciliate at their distal ends; anthers subglobose, 0.25 mm across, somewhat compressed, similar in color, dehiscing across the apical suture or along the sublateral sides; pistillate flowers similarly scattered but sessile, likewise subtended by a whorl of small blunt persistent pubescent bracteoles; perianth of 3 large equal segments and occasionally with a small basal one, thick and hairy, cup shaped, at least 3 mm high, ovately elliptic, united below the middle, on the inside about the base of the ovary provided with a whitish glabrous irregularly divided or laciniate membranous disk; ovary superior, subglobose, 3 mm thick, soft and densely hairy; stigmatic arms 4, rotately spreading from the apex of the ovary, 2 mm long, somewhat flattened, bearded; fruits 4, angular, the edge of each angle doubly creased, 1.5 to 2 cm across, flattish, 4-celled and 4-seeded, much crinkled in the dry state, dark sulphureus short tomentose; the dark brown or nearly black crustaceous and subglobose seed surrounded by a juicy orange red caruncle.

Type specimen numbers 12424 for female flowers, 12423 for male flowers and 12273 for fruit, *A. D. E. Elmer*, Magallanes (Mt. Giting giting), Island of Sibuyan, April and May, 1910.

The fruiting specimens were gathered at 750 feet altitude in moist rich soil of dense woods along the Patoo river; the two flowering specimens were collected along the Pauala river at 1750 feet altitude. These two latter numbers were called "Laguino" by my native Visayan.

This genus is dedicated to *Sr. J. F. Quadras*, a naturalist who besides gathering conchological specimens has collected many new species of plants in the Philippine Islands.

GESNERACEAE

Cyrtandra agusanensis Elm. n. sp.

Lax 3 to 9 dm high suffrutescent plants; stem branched from near the base, the branches repeatedly rebranched, terete, curved and very crooked, ultimately ascendingly curved, 5 to 8 mm thick; bark smooth and yellowish green; woody tissue dingy or more greenish white and with a large pith; twigs crooked and tawny pubescent on the young tips. Leaves opposite, soft membranous, horizontal and recurved toward the slenderly acuminate frequently subfalcate apex, attenuate, broadly lanceolate to narrowly oblong, diverse in size, the larger blades 1 dm long by 2.5 cm wide across the middle or just below it, drying unequally greenish brown, pulverulent or puberulent upon the upper darker green surface, soft pubescent on the nether side, the basal portion entire, otherwise denticulate; midrib deeper and denser tawny pubescent beneath; lateral pairs of nerves 4 to 6, much ascending and curved, similar in vestiture, reticulations obsolete; petiole 1 cm long or longer, gradually extending into the decurrent leaf base, light rusty tomentose. Flowers from the upper leaf axils, usually solitary, odorless, suberect, upon a short densely hairy pedicel or subsessile, subtended by a pair of foliaceous bracts; bracts subequal, 7 mm long, united at the base, lanceolate, slenderly acuminate, 1-nerved, pubescent; calyx green, 1 cm long, short pubescent on the exterior, subinflated, with a very oblique throat; segments 4 but more or less united on one side, terminating into slender or tail-like tips; corolla at least 3 cm long, straight, tubular though widest across the segmented top, 5 mm across the middle, constricted and glabrous toward the base, otherwise long though not densely hairy; segments 4, whitish except the purplish tube, apparently the lower one broadly bilobed, apices rounded, all of them 5 mm long though differing in shape, segments as well as the tube very membranous, hairy on the outside only; stamens apparently only 2, inserted below the middle of the corolla tube; filaments thread-like, glabrous; anthers oblong, 1.5 mm long, articulately lobed at the base, subbasifixed, connective thick and brown, rounded at the apex and with a faint point; ovary glabrous, fusiform, subtended by a cupular 2 mm deep glabrous rim, 7 mm long, fleshy, puberulent; stigma broadly 2-lobed. Fruits also ascending, terete, 1.25 cm long, 4 mm thick at the base or thickest portion, bluntly pointed at the apex, yellowish gray or brown when dry and very much roughened; seeds numerous, imbedded.

Type specimen number 13497, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Collected in wet earth of rocky crevices near the water of a woodland stream at 750 feet above sea level. In Manobo "Bungtagitan."

Cyrtandra inaequifolia Elm. but flower and venation of leaves different. Right close to *Cyrtandra livida Kränzl.* which is also based upon a Palawan specimen collected by *Dr. Foxworthy* yet our leaves are not crenately serrate nor are they obtusely to acutely pointed.

56 **Cyrtandra constricta Elm.** n. sp.

Scandent along small tree stems; stem 1.75 cm thick, terete, crookedly rebranched, 5 m long; branches slender, the leaf bearing portion ascendingly curved, only the very young tips hairy; wood yellowish green, covered with yellowish gray thinly checked bark. Petiole whitish, blackish brown when dry, grooved along the upper side, glabrous when old, strict, 3 to 5 cm long; leaves opposite, scattered along the branchlets, horizontal, leathery, very dark green on the upper glabrous side, much lighter green on the nether side which only in the very young state is strigose, obtuse or subcuneate at the base, acute at the apex, entire below the middle, otherwise bluntly apiculate, oblong, average lamina 14 cm long by 5 cm wide, upper surface blackish and subumber colored beneath when dry; midrib at first yellowish hairy, ultimately glabrate, very deep dull brown beneath when dry; lateral nerves ascending and only slightly curved, 8 to 11 pairs, their tips forming a submarginal vein, much more evident from below, reticulations obsolete. Flowers not seen. Infrutescence suberect or horizontally spreading from the lower leaf axils, the solitary or few clustered pedicels arising from short tubercles roughened by scars; pedicels glabrate, 1.5 cm long, terete, rather slender, slightly thickened toward the distal end, subtended toward or at the base by a subwhorl of imbricated bracts; bracts marcescent, subpersistent, brown when dry, 6 mm long or less, unequal in size, oblong to ovately lanceolate, connate at the base and imbricate or twisted, olivaceus appressed hairy on the outer exposed sides, after falling exposing tufts of persistent ciliate similarly colored hairs; calyx proper 1.5 cm long, gradually tapering from the base to the oblique usually 3-toothed apex, on one side becoming slit open down to the middle or below it, chartaceous, glabrous, terete, green, the rigid segments purplish tinged. Fruit dark green, obovoidly elongated, terete, glabrous, 2 cm long, 9 mm thick above the middle, apex constricted into an elongated point, berry-like; seeds numerous, in a juicy gelatinous mass, brown, subterete, elliptic from the side view, 0.5 mm long.

Type specimen number 14196, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Between the summit peaks of mount Urdaneta in cold, wet and moss laden stunted forests at 6000 feet altitude.

Most closely related to *Cyrtandra scandens Kranzl.* from the Surigao peninsula though distinct in a number of details. More distantly related to *Cyrtandra tayabensis Elm.* from Tayabas province and to *Cyrtandra davaoensis Elm.* from the district of Davao.

87 **Cyrtandra copelandii Elm.** n. sp.

A low and lax undershrub or subherbaceous; stems few to several from the same root cluster, reclining and rigid toward the base, finally ascending, unbranched or sparingly branched, crooked or curved, 1 cm thick, 1 to 1.5 m high, terete; roots long, rigid; woody tissue greenish white with a large pith, covered with yellowish gray bark; twigs when young isabellinus tomentose. Leaves of few opposite pairs toward the distal end of the stem or branchlets, thinly leathery, horizontal and recurved toward the obtuse to acute apex, base cuneate, deep green and thinly woolly hairy on the upper surface but ultimately glabrate, soft tomentose and much paler beneath, drying very unequally on the 2 sides, oblong to elliptically oblong or the smallest 5 cm long ones obovately oblong, averaging 2 dm long without the petiole and 7.5 cm wide at the middle, margins entire toward the base, otherwise serrately toothed; midrib very prominent, with similarly colored woolly hairs; lateral nerves 17 to 23 pairs, pinnate, divaricate and slightly curved, much less prominent though similarly pubescent, the basal one or two pairs short, reticulations obscure and mainly in the marginal one half of the blade; petiole 1.5 to 2 cm long, broadly flattened along the upper side especially toward the expanded base, thickly woolly though the upper surface in the old ones glabrous. Inflorescence chiefly in small clusters from the old leaf axils along the stem or branches, divaricate or subpendulous, 2 to 4 cm long, branched from below the middle; peduncles isabellinus woolly, occasionally arising from a short tubercle; branches divaricate, the longer ones rebranched, subtended by persistent long hairy bracts; pedicels 3 mm long or longer in the fruiting state, gradually thickened toward the apex and blending into the calyx proper, provided with woolly tawny colored hairs and usually without minute terminal glands, subtended at the base by bracts; bracts 2.5 mm long, linear, 0.5 mm wide, gradually tapering, brown when dry, membranous, persistent, on the outer surface densely covered with long similarly covered soft hairs; calyx with the segments 3.5 mm long, whitish toward the base, segmented tips lilacinus, subturbinate, the concrete portion with long tawny hairs terminated by minute dark brown glands, at the throat 1.5 mm thick; calyx segments 2.25 mm long, 1 mm wide at the base, 5, gradually tapering from the base to the blunt apex, the dorsal basal portion with glandularly tipped hairs, the apical portion on the same side puberulent, coriaceous; corolla caducous, white or nearly so, very thin or subhyaline, glabrous, broad, 4 mm long, the basal one half united, unequally lobed, the 4 or more lobes comparatively broad and rounded at the apex; stamens alternating with the lobes and as many, inserted upon the basal portion of the corolla; filaments less than 1 mm in length, inwardly curved, glabrous, compressed; anthers deep yellow, subglobose, nearly 1 mm in diameter, basifixed, opening by a transverse slit across the apical portion on the inner side; ovary base imbedded, apical portion conical, glabrous, 1.25 mm across; style nearly 2 mm long, strict, also glabrous; stigma flat, a trifle expanded, puberulent. Fruits ovoidly globose, 2 mm in diameter, pulverulent in the dry state, subtended by the persistent calyx and bearing the slender style; seeds minute, yellowish brown, punctate, irregular in shape, very numerous.

Type specimen number 13716, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered in wet humus covered ground in a deeply worn forested depression between Duros and Cawilanan peaks at 3500 feet elevation. Dedicated to *Dr. E. B. Copeland.* The Manobo vernacular name is "Panabdog."

Foliage is similar to *Cyrtandra hypochrysoides Kränzl.* but inflorescence entirely different. Possibly it should be classified under some other genus.

99

Cyrtandra grandifolia Elm. n. sp.

Succulent and frutescent shrub; stem solitary or few from the short prop roots, 2 m high, 3 to 6 cm thick, terete, unbranched, upright and straight; wood very soft, sappy white, with a very large green pith; bark characteristically checked longitudinally, nearly caesius in color, the middle portion green, the inner side brown; twigs or the apical stem portion 2.5 cm thick, obscurely angular, brown. Leaves opposite, few to several pairs, decussately arranged, horizontal or descending, heavy and leathery, dark velvety green on the upper surface, much paler green and with a soft short brown tomentose pubescence on the nether side, 6 to 9 dm long, 1.5 to 2.5 dm wide across the middle, oblong, obtusely rounded at the base, apex obtuse, margins entire or irregularly denticulate, curing grayish brown beneath and blackish above; petiole very stout, 3 cm long more or less, reddish brown hairy, thickened at the base, frequently bordered with the decurrent leaf base; midrib thick and light fuligineus beneath, cinereously pubescent along the upper side especially toward the base; lateral nerves 18 to 28 pairs, pinnate, divaricate, ascendingly curved toward their ends, similar in vestiture and prominence to the midrib, cross bars and reticulations faint. Inflorescence ascending from the leaf axils, upon short thick fulvus hairy stalks; involucral bracts greenish, the outer or larger ones subfulvus hairy, 5 cm long, ovate and acute toward the apex, occasionally the inner ones obovate and the broadly rounded apex irregularly lobed or cut; flowers few to several in a cluster of the bracts, erect, only a few in anthesis at a time; calyx white and greenish toward the lobed apex, submembranous, 2 cm long, pulverulent on the exterior, 7.5 mm wide toward the distal end, only one half as wide at the base; lobes 4 mm long, irregular in size, the lower apparently broader and bilobed; pedicels 1.25 cm long, stout, puberulent, inserted in a row upon the basal portion of the bracts; corolla 3 cm long, the tube glabrous and whitish or on the lower inside yellow, the upper portion subinflated and puberulent; lobes 7.5 mm long, unequal, broad and rounded at the apex, the lower 3 purplish, widely spreading in full flower; stamens 2, fertile, included; filaments 1 cm long, attached to the corolla above the middle, fleshy, glabrous, arching over in the upper region of the corolla; anthers 2.5 mm long, 2 mm thick, elliptic, subbasifixed, with a thick connective, blunt at the apex, notched or emarginate at the base; ovary surrounded at the base by a 2 mm deep glabrous cartilaginous rim, 2.33 cm long, the basal one half conspicuously bulged, base and apical two thirds constricted, glabrate; stigma broad, disciform, 4 mm across, green.

Type specimen number 13711, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered in a very damp or wet and loose stony soil of humid woods and among a *Selaginella* infested depression near the ridge at 3500 feet altitude between Duros and Cawilanan peaks. "Intay" in Manobo.

Without doubt this belongs to the *Cyrtandra cumingii Clk.* group.

89

Cyrtandra urdanetensis Elm. n. sp.

Low and suffrutescent shrubs; stems numerous from the same root cluster, ascending or those on the lower side of the incline descending, ranging from 3 to 9 dm long, few rebranched, somewhat crooked, greenish or grayish brown toward the base, terete, 3 to 5 mm thick, the apical one half castaneus pubescent; roots long and wiry. Leaves descending, flat or recurved, coriaceous, oppositely scattered, much lighter green beneath, glabrous except the midrib and lateral nerves which are appressed castaneus hairy, when dry blackish brown on the upper surface and grayish on the more or less roughened nether side, base narrowly cuneate, apex acuminately pointed, the margins few to several, sharply and slenderly toothed or serrate, entire toward the base, the teeth below the middle small, broadly oblanceolate or merely elongated, 1 dm long or less including the petiole, 2 to 3 cm wide including the teeth at the middle or a trifle above it; midrib beneath covered with castaneus appressed hairs; lateral nerves 3 to 5 opposite pairs, similarly pubescent, much ascendingly curved from the base, their main ends ending in the serrate teeth, secondary nerves with reticulations faint; petiole 1 to 1.5 cm long, deep maroon hairy. Flowering stalks 2.5 cm long or less, brown, strigose, bearing a large similarly hairy bract at about the middle, slender, usually recurved; pedicel or that portion of the stalk above the bract 1 cm long, densely dark brown hairy, rather stout and descendingly curved; calyx tubular, at least 2 cm long, dark brown appressed pubescent, gradually inflated toward the segments; segments 3, unequal, broad at the base, tapering to a fine point, membranous as is also the tube portion, ciliate on the outside especially along the veins, apical portion occasionally with 2 slender points; corolla twice as long as the calyx, tubular though widest toward the lobed apex, apparently glabrous or strigose along the veins, very thin; ovary linear, constricted toward the base and apex, pubescent. Young fruit from the lower leaf axils or from the stems, single or few clustered.

Type specimen number 13882, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Gathered upon steep inclines in loose black ground under densely shaded forests near the Catangan creek at 2000 feet altitude. Its native or Manobo name is "Pagumpungan."

Not *Cyrtandra incisa Clk.* nor its variety. Neither is it *Cyrtandra philippinensis Clk.* to which *Cyrtandra grossedentata Elm.* may properly belong.

90

Dichrotrichum urdanetense Elm. n. sp.

Trailing or subscandent along small stems up to 1 m high; stem 6 mm thick when fresh, very flexible, terete, branched and much curved toward the top, forming small intertwining massess, wiry, covered with flaky yellowish gray bark which in the young green tips is densely covered with long grayish hairs. Leaves alternating, well scattered, leathery, descending, much paler beneath, broadly lanceolate to ovate, obtuse at both ends or obtusely rounded at the base, the blades 4 to 6 cm long by 1.25 to 1.75 cm wide below the middle, appressed cinereous on the upper surface, tomentose beneath, the basal one third entire, otherwise crenately toothed, curing grayish brown on both sides; petiole reddish brown when fresh, 2 to 5 cm long, grayish white hirsute, apical buds and young leaves densely covered with whitish hairs; midrib whiter pubescent beneath, with 3 to 4 alternating pairs of much ascending lateral nerves, cross bars or reticulations none. Inflorescence usually solitary from the leaf axils, upon yellowish gray densely hairy divaricate peduncles 1 cm in length; pedicels severally clustered in a false umbel, slenderer, similarly hairy, ascendingly curved and finally interlaced, subtended at the base by a pair of oblong and strigose foliaceously tipped bracts, the pedicels in the fresh state reddish tinged; calyx 5.5 mm long, apparently 5-segmented, united about the base, green, pubescent on the outside; segments widest above the middle, apex broadly rounded, linearly oblong, 1.25 mm wide; corolla 2.5 cm long, 6 mm thick across the middle, curved above the middle, cylindric, the lobulate throat very oblique, puberulent on the exterior; lower segment reflexed, 3-lobed, 5 mm long, the lobes obovately oblong, the middle one broader but not longer, apices broadly rounded, densely pubescent toward the apex even on the ventral side; the 2 lateral lobes short and broad; the upper one straight, somewhat shorter than the lower lip, broadly bilobed, softly pubescent toward the marginal portion; stamens of 2 pairs; the filaments of the lower pair from the middle lower portion of the corolla tube and ascendingly curved toward the anthers, at least 1 cm long, filifrom and glabrous, those of the upper pair similar though arising from the upper middle portion of the corolla tube and descendingly curved toward the anthers; anthers oblong, 1.5 mm long, the folded cells plane on the introrse surface, connective thick especially toward the abruptly constricted apex which are usually contiguous, bilobed at the base; ovary at the base surrounded by a crustaceous glabrous rim, nearly black when dry, 2.5 cm long, glabrous except the puberulous distal end; stigma of 2 rather large recurved fleshy lobes.

Type specimen number 13710, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Discovered in the humid moss laden and rigid woods among the summit peaks of mount Urdaneta at 6000 feet altitude. "Balibadon" is its Manobo name.

This pretty genus is always met in our alpine regions by one or two species and nowhere are the individual plants common. Of this species as well as of *Dichrotrichum calelanense Elm.* and of *Dichrotrichum biflora Elm.* I found but one plant.

91

Trichosporum grandiflorum Elm. n. sp.

A subscandent shrub-like vine; stem 3 to 5 dm long, few branched, 3 to 5 mm long, subterete, glabrous except the yellowish hairy young portion. Leaves opposite, widely scattering, mostly horizontal, thickly and rigidly coriaceous, elliptically oblong or ovately so, entire, smooth and glabrous on both sides, curing equally yellowish gray on the sides, rounded at the base, obtuse or subacute at the apex, the larger blades 9 cm long by 4 cm wide at or a trifle below the middle, frequently smaller; midrib very pronounced beneath, grooved above; lateral nerves only visible from the upper surface in the dry state, 4 to 6 pairs, very oblique and curved toward their distal ends; petiole 1 cm long or those of the smaller leaves only one half as long, thick, deeply grooved above, yellowish to brown when dry, glabrous. Flowers in pairs or in few flowered clusters from the leaf axils or from the axils of their prominent scars; peduncle 5 mm long, recurved, arising from woody tubercles, usually strigose, bearing a persistent foliaceous bract at the upper distal end; bract elliptic, 7 mm long, strigose on the outside. Pedicel green, glabrous, 1 cm long, somewhat rugosely expanded at the distal end; calyx 3.5 cm long, boot-like, usually a trifle curved, glabrous, 7.5 mm thick at the base, gradually thickened toward the distal 4-lobed end; lobes unequal, the 2 lateral or larger ones 7 mm long by 5 mm wide across the base, the upper one parted, triangularly oblong, all broadly rounded at the apex, glabrous except the few seta-like hairs from the dorsal apical portion; corolla 7 cm long, the basal one third 5 mm thick, glabrous, the upper portion strongly curved, interior of the tube yellowish red, segments deeper red on the exterior, 4-lobed; lobes similarly puberulent on the outside, unequal, the lower one subreflexed, the upper one straight and as its relative on the calyx is 2-parted, the 2 lateral ones 1 cm long and nearly as wide across the base, all apices broadly rounded; stamens of 2 pairs, fertile, included; filaments of the lower pair from above the middle and in the lower portion of the corolla tube, slender, glabrous, ascendingly curved towards the contiguous anthers, 2.5 cm long; those of the lower pair arising from the upper part of the corolla tube and descendingly curved towards the contiguous anthers, otherwise similar; anthers 4 mm long, almost 2 mm thick, oblong but distinctly thicker above the middle, apex obtuse and usually contiguous, base auriculately lobed or bifid, the folded cells introrse and plane, subbasifixed, the connective much enlarged on the back toward the apex; pistil 5.5 cm long; ovary with a distinct glabrous cartilaginous rim about its base, thinnest toward the minutely glandular and puberulent distal end; stigma discoid, obscurely lobulate.

Type specimen number 14154, *A. D. E. Elmer,* Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered among other vines growing over a snag ten feet above ground on the summit of Cawilanan peak at 5000 feet altitude. Only one plant was seen and the natives or Manobos called it "Babayranon."

Apparently nearest related to *Trichosporum truncatum Elm.*

4 2

Trichosporum miniatum Elm. n. sp.

Scandent along small stems up to 3 m high; stem terete, the size of a slate pencil, tough, the greenish woody tissues covered with smooth and yellowish green bark; branches chiefly at the top, drooping and forming a loose tangled mass, only sparingly rebranched. Leaves thickly coriaceous, descending or pendant, opposite and well scattered, shallowly folded in the upper dark green surface, much paler beneath, drying equally grayish on both sides, entire, thinly pubescent beneath but denser toward the midrib, the slenderly acute to acuminate apex recurved, base obtusely rounded or rounded, ovately oblong, the larger ones 1.5 dm long by 5 cm wide at or a trifle below the middle; midrib ridged beneath, caniculate above, hirsute in the early state; lateral nerves very obscure, 5 to 8 pairs, much ascending and curved, reticulations not evident; petiole stout, 6 mm long, hairy. Flowers in pairs or in clusters from the terminal leaf axils; pedicels green, slender, recurved, yellowish brown tomentose in the dry state, 1 cm long, bibracteate below the middle, at the base subtended by a series or subwhorl of setaceous externally pubescent bracts; calyx green, membranous, soft pubescent on the dorsal portion, 5 mm long, united at the base; segments 5, slenderly acuminate from the 1 mm wide base, usually 3 veined though the middle one is more prominent, subequal; corolla 3 cm long, miniatus or deep ruber red, tubular, a trifle thicker towards the 7 mm thick and lobed apex, puberulent except at the base; lobes 4, broader than long, the upper lip bilobed and straight, the others divaricately spreading, also puberulent on the outside except the glabrate margins, throat very oblique; stamens 4, all fertile, equalling the throat or slightly exerted, inserted upon the corolla above the middle, 1.5 cm long, curved, finely puberulent; anther cell deep horse-shoe shaped, plane, connective thick and fleshy, 1.75 mm long, 1.5 mm wide, narrowly lobed at the base, subbasifixed, apex rounded and usually contiguous; ovary base subglobose, glabrous, nearly black when dry, more or less rugose; ovary proper linear, slenderly stipitate toward the base, constricted toward the stigma, with a soft and dense hyaline pubescence along its entire length; stigma glabrate, discoid, towards 2 mm across. Capsules pendant, usually curved, pale green and turning straw brown when dry, terete, creased along the 2 sutures, slenderly stipitate at the base, abruptly beaked at the apex, 9 to 12 cm long, strigose, laterally dehiscent and with subhyaline septa, persistent even after their stipes become shredded; seeds very numerous, dark brown, elongated, with a whitish tuft of fine hairs at each end.

Type specimen number 13529, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1911.

Collected in dry rocky ground along a sharp wooded ridge at 3000 feet altitude along the trail leading up to Duros peak. The Manobos call it "Pamingcawon."

The larger leaves whose under side is more or less pubescent and the strigose capsules primarily distinguish it from *Trichosporum cardinale Copel.*

95

Trichosporum urdanetense Elm. n. sp.

A long and slender climber; stem terete, thick, green though grayish brown on the old portion, flexible, only occasionally branched, the younger ones dull purplish brown on the exposed side; branches also climbing, straight and erect; roots short and wiry, usually extending from the leaf joint into the bark. Leaves chiefly horizontal, scattered all along but more numerous toward the top, rigidly coriaceous, dark green on the upper flat surface, yellowish or greenish white beneath in the fresh state, opposite or root opposed, elliptic, broadly obtuse at the apex and broadly rounded at the base, 3 to 5 cm long by 2 to 2.5 cm wide at the middle, occasionally much smaller, entire, glabrous, dull grayish on both sides when dry; midrib evident from beneath towards the base, sunken along the upper side; lateral nerves obscure, mainly arising from below the middle and much ascending; petiole stout, 3 to 5 mm long, in the early state usually hairy as well as the marginal basal portion of the blade, traugh-like upon the upper side. Flowers terminal, odorless, upright; pedicel slender, greenish, at least 1 cm long, crisply hairy, slightly enlarged toward the distal end; calyx also greenish in the fresh state, deep cup shaped, glabrate except about the puberulent base, thickly coriaceous, 1 cm long by 7.5 mm thick, ultimately separating from the slightly expanded pedicel, 5-lobed; lobes subequal, broad and shallow, rounded and with few ciliate hyaline hairs at their ends; corolla 3.5 cm long, deep blood red, 8 mm thick above the middle, constricted towards the base, glabrate, a trifle curved, 4-lobed at the apex; lobes subequal, broadly elliptic except the upper one which is bilobed, 5 mm long and nearly as broad, few parallel veined and nerved in the upper region, with few ciliate hairs along the upper rounded edge, pulverulent or puberulent on the outer side especially toward the apex; stamens 4, all fertile, included; filaments filiform, glabrous, 1.5 mm long, inserted upon the corolla tube above the middle, strongly arching or curved; anthers 2 mm long, 0.5 mm less in width, auriculately lobed at the base, basifixed, abruptly constricted into a blunt apical point, the cell surface flat, connective thick especially toward the apex; ovary surrounded by a glabrous conical rim 2 mm high, 2.5 cm long, 1 mm thick, somewhat thinner at both ends, glabrate except toward the distal puberulent portion; stigma composed of a thick also puberulent rim. Old capsules were seen and noted in my field label as 1.5 dm in length.

Type specimen number 14115, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Found growing along the rough bark surface of a large tree trunk in dense forests of Cawilanan peak at about 4000 feet altitude. "Simancoyong" in Manobo.

Trichosporum everettiana Kränzl. but the pedicels on our material are pubescent, the broad and subinflated calyx of *Dr. Kränzle's* species is entirely glabrous and perfectly truncate.

GENTIANACEAE

94

Gentiana copelandii Elm. n. sp.

Annuals; stem single or branched from near the base or laterally few branched, up to 6 cm high, decumbent toward the brown base, otherwise erect and light green, glabrous or short puberulent toward the top or along the younger portion, obscurely angular and appearing striate in the dry state; roots few, long and fibrous, glabrous. Leaves opposite, darker green than the stem or branches, decussately arranged, divaricate, smaller and more scattered toward the base, normally 2 to 3 mm apart, more crowded toward the top, 3 to 4 mm long or shorter, 1.75 mm wide below the middle, ovate or ovately elongated or broadly lanceolate, completely folded on the upper side and usually recurved, with a straw white sharply pointed apex, base rather broad and clasping the stem or branches; midrib appearing ridged beneath, lateral nerves none, the entire margins also straw brown or white, submembranous. Flower solitary, terminal, erect, subtended by a pair of leaves, apparently upon a very short pedicel; calyx 5 mm long, gradually tapering from the base toward the 3 mm wide top, the basal 3 mm united and hyaline; teeth 5, glabrous and green, from 0.5 to 0.75 mm wide at the base, tapering from the base to the setaceously acuminate point; corolla also glabrous, 7 mm long, slenderly funnel shaped or gradually tapering from the base to the 3.25 mm wide throat, toward the base hyaline, the basal 4.5 mm united; lobes rotately spreading, 5 in number and alternating with the calyx segments, about 2.5 mm long including the broad hyaline connectives between them; the free terminal portion of the lobes broadly acute, 1.25 mm long and as wide across the base, the middle portion appearing bluish green in the dry specimens; stamens 5, alternating with the corolla segments, included; filaments filiform, inserted at the middle of the funnel shaped corolla tube, glabrous, averaging 1.5 mm in length; anthers pale yellow, ovately oblong, notched at the base, obtusely rounded at the apex, basifixed, compressed, dehiscing along the edge on the inner face, 0.5 mm long, almost reaching the throat; ovary slenderly obovoid, slightly compressed, glabrous, the basal one third hyaline and without ovules, 3.5 mm long, 1.5 mm thick toward the rounded top; style very short, bearing 2 strongly recurved stigmatic lobes; ovules many, brown, appearing imbedded or arranged in an ellipsoid mass.

Type specimen number 11692, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, September, 1909.

Collected by the author in moss and scale-moss beds at 8500 feet altitude or on the summit of mount Calelan. It was called "Tetet-liabod" by the Bagobos. Dedicated to *Dr. E. B. Copeland* who was the first American botanist to climb and explore mount Apo.

Quite distinct from *Gentiana luzonensis Merr.* based upon his number 4558 from mount Data. Ours has a much slenderer habit, has more numerous and setaceously pointed leaves and with shorter flowers whose calyx segments are also more pointed.

GNETACEAE

95 **Gnetum vinosum Elm.** n. sp.

Small but slender tree; wood without odor or taste; bark mottled, smoothish; branches chiefly toward the top, divaricate, arising from thickened portions of the stem, crookedly and numerously rebranched, the place of branching always nodulose; the slender young twigs horizontally spreading or drooping, green, glabrous. Leaves opposite, glabrous, subchartaceous, horizontal or descending, shallowly conduplicate on the upper shinning deep green surface, much paler beneath, curing greenish on both sides, the entire edges finely involute at least in the dry state, apex abruptly terminating into a sharp point, base obtuse, oblongish, the average lamina 12.5 cm long, 5 cm wide at the middle or across the widest portion; petiole 1.5 cm long, glabrous, caniculate, quite slender, dark brown when dry, devoid of stipules; midrib stout beneath, grooved above, brown in the dry state; lateral nerves 7 to 9 pairs, divaricate; their ends interarching 5 mm below the edge, other reticulations very obscure. Inflorescent spike ascending, mostly solitary, either terminal or from the leaf axils, green though brown when dry, glabrous, 5 cm long but longer in the fruiting state and recurved, flower bearing from below the middle. Young fruits in whorled clusters, subtended by a verticel of small bracts or bract vestiges, sessile and surrounded by a pulverulent or granulate rim-like receptacle, ovoidly elongated and sharply pointed, the young fruit as well as the old fruit glabrous; the mature nuts are ellipsoid, at least 2.5 cm long, smooth and shinning purplish or wine red, very pretty.

Type specimen number 12283, *A. D. E. Elmer*, Magallanes (Mt. Giting-giting), Island of Sibuyan, April, 1910.

Found in moist forested depressions along streamlets with gravelly soil at 1000 feet altitude. The local Visayan called it "Bago." The poor people cook the young leaves and roast the mature nuts for food.

Its larger differently shaped and colored fruit primarily distinguish it from *Gnetum gnemon Linn.*

GONYSTYLACEAE

Gonystylus philippinensis Elm. n. sp.

A rather low and rigid tree; stem crooked, 4 dm thick at least, 7 m high, with a flat crown; branches rigid, the main ones divaricate, the ultimate ones comparatively short and suberect, the young or apical portions of the twigs glabrous. Leaves alternating, chiefly toward the ends of the branchlets, horizontally spreading, thickly coriaceous, shining green on the upper somewhat folded side, much lighter green beneath, obscurely punctate, curing similarly dark brown on both sides, glabrous, strongly conduplicate toward the abruptly recurved short obtuse apex, base also obtuse or more commonly obtusely rounded, the entire margins curved upon the nether side at least in the dry state, subelliptic, the blades varying from 5 to 10 cm long and average about 3.5 cm wide across the middle or the widest portion; midrib sunken along the upper side, much raised beneath; lateral nerves quite numerous, ascending, nearly straight and subparallel, frequently anastomosing, their tips united into a submarginal line, more prominent beneath though quite evident from the upper side also; petiole thick, 1.5 cm long, dark brown when dry, widely grooved along the upper side. Inflorescence terminal, 1 dm long, few paniculately branched, the larger branches horizontal or rather divaricate and rebranched above the middle, all the stalks puberulent or pubescent but when old becoming glabrate, the few ultimate branches short and thick; pedicels few to severally clustered from the distal ends of the last branches, cinereous, 1.5 cm long, greenish as are also the inflorescent stalks; flowers very rigid, odorless, yellowish green, globose; calyx 7 mm long, very thick and rigid, hirsute on both sides, the basal one third united, the 5 larger ones ovately elliptic, occasionally the smaller ones broadly lanceolate, edges overlapping in the bud state; petals filamentous, 3.5 mm long, glabrous, rigid and leathery, inserted in a series upon the concrete base of the calyx, flattened and gradually tapering from the base to the apex, inwardly curved from the base, deep reddish brown when dry; stamens many, inserted upon a hairy torus-like rim around the ovary, erect; filaments subequal in length, slender, pale yellow and glabrous, 1 to 1.5 mm long; anther usually a trifle longer, doubled and their ends unequally terminated at their bases; ovary ellipsoid, 3 mm long, densely hairy; style equal in length, terete and glabrous, reddish in the dry state, when young crooked or even looped, terminated by a large subcapitate equally colored and likewise glabrous stigma.

Type specimen number 12520, *A. D. E. Elmer*, Magallanes (Mt. Giting-giting), Island of Sibuyan, May, 1910.

In well drained soil of a wooded ridged at 5000 feet altitude or near the summit base of the central mountain.

Compare with *Aquilaria bancana Miq.* Fl. Ind. Bat. suppl. 355.

GRAMINEAE

97 **Dendrocalamus merrilliana Elm.** n. comb. *Gigantochloa merrilliana Elm.* Leaf. Philip. Bot. I, 273, 1908.

This graceful tree-like grass is the same species as *Dendrocalamus parviflorus Hack.* published six months later in Philip. Journ. Sci. III, C, 161.

98 **Dinochloa macrocarpa Elm.** n. sp.

Sprawling and scandent; stems several, climbing by loops, 1.5 cm thick at the base, farther up again as thick, tough, terete, smooth and shining, green, nodules not conspicuous and 3 dm apart, ultimately numerously rebranched, the slender somewhat drooping branchlets usually in small clusters and forming a tangled mass; stem sheath 1.5 dm long at most, tightly enclosing the stem, its apex truncate or with the point broken or warn off. Leaves alternate, at the ends of the slender twigs, flat, tough, very smooth, somewhat darker green on the upper side, setaceously acuminate, base abruptly obtuse or truncately rounded, the larger lamina 4 cm wide below the middle, 2 5 dm long, entire, subcoriaceous, a trifle glaucous toward the more or less undulate base, broadly linear or linearly lanceolate, curing brownish; petiole or the basal portion of the blade rigid and usually twisted, brownish and glaucous, broadly flattened; sheaths greenish, overlapping, imbricate toward the base, separated at the throat; ligule nearly truncate or minutely auriculate, provided with stramineus bristles 5 mm in length; midvein more conspicuous beneath, the lateral ones much less so. Flowers not observed. Infrutescence upon leafless branchlets, chiefly terminal, from 3 to 9 dm long, its alternate branchlets relatively short and parallel, shortly rebranched; spikelets in sessile irregular small groups scattered especially numerous toward the distal end; glumes pale straw colored and persistent; fruit hard, 1.25 cm long at least when mature, nearly as thick across the middle, ends truncately rounded, subglobose or more ellipsoid, glaucous, dark purple of deep wine color when fully ripe, containing a solitary large seed, not dry but rather fleshy, apex provided with a short minute point.

Type specimen number 12059, *A. D. E. Elmer*, Magallanes (Mt. Giting-giting), Island of Sibuyan, March, 1910.

This climbing bamboo was collected in red soil of turf interspersed with shrubberies along the Pauala river bank at about 100 feet above the sea. The local Visayan called it "Bolocouwe."

I have repeatedly collected fruiting specimens of *Dinochloa scandens (Blm.) O. K.* from which our new species is distinguished at once by its much larger fruits or seeds which hang in grape-like clusters.

99

Isachne apoensis Elm. n. sp.

Loose clumps or more or less scattering; stem reddish especially toward the base, 4 to 7 dm high or long, 1.5 mm thick, terete, glaucous green or straw brown, glabrous, nearly smooth or obscurely striate longitudinally, reclining and taking root from the lower joints, few to severally clustered from a perennial root base, the larger or stronger stems alternatingly branched up to the middle, the branches ascending, green and slender, the points of branching strongly enveloped by marcescent bracts, other joints nodulose; roots long, flexible, numerous. Leaves alternating, scattered along the whole length of the stems and their branchlets but usually above the middle, ascending or divaricate, soft membranous, equally light green on both sides in the fresh state, duller green when dry, the older ones subpersistent and straw brown, linear, gradually tapering to the sharply pointed apex from the middle of the blade, the base only slightly narrowed, varying from 4 to 6 mm wide below the middle and 5 to 9 cm long, frequently much shorter and bract-like, flat or nearly so, very slightly roughened; midvein stramineus and rather prominent beneath below the middle, the 3 lateral veins of each one half quite evident beneath; sheaths one half to two thirds as long as the internode, smooth and membranous, ultimately widely separating from the stem or branches, glabrous or only the edges ciliate, striate, ligule composed of a circle of hyaline hairs. Inflorescence terminal, erect or ascending or often recurved, the young panicles slender, the old ones broadly paniculate, 1.5 to 2.5 dm long, the larger ones nearly 1.5 dm across, glabrous though very slightly scabrid, green or stramineus when old, all branches divaricate and making a lax panicle, the ultimate branchlets wand-like and very slender; pedicels varying from 3 to 9 mm long, also wavy, appearing a trifle thicker at the distal ends; spikelets elliptic, 1 to 1.25 mm long, 2-flowered; empty glumes persistent, enclosing the 2 florets, in anthesis widely spreading at the top; the lower one a trifle longer, the margins slightly thicker than the middle, obscurely 3 to 5-veined region, obtuse at both ends, the apical margin sparsely hyaline ciliate, otherwise glabrous, broadly elliptic; the upper empty glume a trifle narrower, notched at the apex or occasionally in the old spikelets well parted, less ciliate at the apex, otherwise similar to the opposite one; flowering glume 1 mm long, broadly elliptic or rotund, subhyaline or somewhat thickened along the margins, glabrous, shallowly convex on the back, sunken on the ventral side; palet elliptic, hyaline except along the more or less thickened margins, a trifle shorter and narrower than the flowering glume, well closed in upon the ventral surface of the flowering glume before anthesis; stamens 3, upon very short hyaline filaments, linear, 0.5 mm long or longer; style also very short, the upper dwarfed or sterile, terminating the short rachis, flat, darker brown and one half as large, the edges appearing minutely ciliate.

Type specimen number 11578, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August, 1909.

Found in wet sand gravelly soil along the Cati creek upon land slides at 6000 feet altitude on the northeastern side of the mountain whose name it bears. "Buyo" in Bagobo.

As to our Philippine species it is most closely related to *Isachne beneckei magna Merr.*

Ischaemum todayense Elm. n. sp.

Stems reclining and forming tangled masses, a few dm to 1 m in length, occasionally branched above the middle, the apical portion erect or suberect and bearing the leaves, the basal one half or more nearly prostrate and somewhat curved, rooting at the nodes and usually with dry persistent leaves, 5 mm thick toward the base, nodes slightly thickened, yellowish brown and polished, terete except on the side of the branches which is distinctly grooved along the whole length of the internodes; branches few, ascending, rarely rebranched, clothed with the leaf sheath. Leaves likewise ascending, rather rigid, linearly lanceolate, the older ones becoming recurved, flat or nearly so, slightly paler beneath, the upper ones 1 dm long and 1 cm wide, the lower ones at least 2 dm long and 3 cm wide, glabrous and nearly smooth on both sides, somewhat constricted and truncately rounded at the base, slenderly tapering above the middle to the setaceous point, dull brown when dry; midvein lighter brown in the dry state, quite evidently ridged beneath; sides with 4 to 7 lateral relatively obscure veins; sheaths

1 dm long, exceeding the internodes, ultimately separating from the stem clear to the base, smooth and glabrous, finely striate, well curved around the stem in the younger state, the sides at the apex truncate and bearing an erect similarly truncate 1 to 2 mm wide finely ciliate ligule. Spikes fastigiately digitate, yellowish green, purplish with age, varying from 2 to 12 cm in length, arising from near the base, plane toward the inner side; flowers in 3 rows, articulate, the middle outer row subsessile and awned; the 2 lateral rows usually awnless, the pedicellate flower alternating with the distichously branched articulations; the pedicels and articulations hard, shining, rigid, somewhat curved along the inner side from the base, keeled along the outer edge, doubly keeled along the inner and white ciliate, otherwise glabrous, the articulations 4 mm long, the pedicel 1.5 mm longer; spikelet rather broad in anthesis, 2-flowered, the basal one staminate, the upper pistillate; first of the empty glumes of the lower or staminate floret reddish brown, rigid, 8 mm long, the basal two thirds deeply concavo-convex, 2-keeled along the dorsal side toward the minutely 2-pointed subacute apex, the keels minutely ciliate along the edges, about 4 to 5 mm wide at the base when spread out; flowering glume broadly lanceolate, sharply acuminate, subhyaline, glabrous, 1.5 mm wide at the middle or below it, the hyaline margins ventrally folded; palea when spread out appearing wider, hyaline, acuminately pointed, about as long; lodicule short and truncately rounded; stamens 3; filaments also hyaline, 1 mm long; anther dark or reddish brown, 3 mm long, flattened and linear, 0.5 to 0.75 mm wide toward the base, base deeply lobed, apex with 2 slender points; first of the empty glumes of the empty glumes of the upper or pistillate floret 9 mm long, likewise rigid and reddish brown, the basal two thirds deeply concavo-convex, 3 mm wide across the base or broader portion, the apical portion tapering into a finely scabrid awn-like point; flowering glume 6 mm long, oblong, one half as wide, hyaline below the middle, apex slenderly acute, bearing an 8 mm long green minutely scabrid nearly straight awn from its back below the bifid apex; palea 7 mm long, 1.25 mm wide at the base, gradually tapering to the apex, hyaline except the 2 veins;

ovary fusiform, dark brown, glabrous, short stipitate, 1 mm long; styles 2, slender, glabrous, 3 mm long at least, connate at the base, stigma dull purplish brown ciliate.

Type specimen number 10521, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, May, 1909.

Collected in black soil of glens among secondary forests at 3000 feet altitude. "Halopos" is the vernacular Bagobo name. It is good feed for horses and cattle.

Between *Ischaemum digitatum Brong.* and *Ischaemum intermedium Brong.* Its larger leaves, more branched inflorescence and middle row of awned spikes at once distinguishes it from *Ischaemum muticum Linn.*

Rottboellia tongcalingii Elm. n. sp.

Small bi or perennial clusters; stems few to several, arising singly from short more or less thickened or nodulose rootstocks, strict, 1 to 2 m high, light green, terete, erect or ascending, inclining toward the apex, 5 mm thick at the base; roots wiry, the few nodes swollen. Lower cauline leaves 4 to 6 dm long, deeply grooved along the upper side and whitish along the midvein beneath, 5 to 8 mm wide, linear and slenderly tapering to the very finely pointed scabrid apex, otherwise nearly smooth except the roughened margins, strictly ascending, when old recurved and more or less persistent, edges curved upon the ventral 'side or involute especially the upper one half, expanded at the point of attachment of the sheath, the uppermost leaves only 1 dm long and gradually tapering from the conduplicate basal portion to the setaceous point, all drying blackish brown; midrib and the 3 to 4 lateral pairs appearing ridged beneath and striate above; upper sheaths much shorter than one half of the internodes, longer than one half the internodes toward the base, well imbricating below, somewhat twisting around the stem, gradually separating toward the distal end, margins strigose and the upper sheaths long yellowish hairy on the back above the middle as well, numerously striate but not scabrous, at the base of the stems marcescent; ligule 1 mm wide, erect, terminating the sheath and extending around the inner side of the blade, usually strigose from its base, truncate. Spikes terete, 1.5 mm thick, ascending and curved, terete, green except the reddish brown glumes, dark brown when dry, varying from 3 to 8 cm in length; inflorescence slenderly elongated, 3 to 3.5 dm long, alternatingly branched from the base but bearing more spikes toward the top, the younger spikes well enclosed by the uppermost leaf sheath; the branches much ascending, 3 to 5 or even 8 cm long, very slender, occasionally provided with a sharply pointed bract-like leaf; the outer or protecting glumes at least 3 mm long and 1 mm wide, straw brown, thick and very rigid, glabrous, distinctly truncate at the base, apex obtusely rounded, only slightly scabrid on the back, not ridged or punctate, in anthesis separating at the apex from the rachis, not exceeding the internodes, the edges well curved over the ventral side; the glume next to the rachis subhyaline or the margins somewhat thickened, 2 mm long or nearly so, deeply folded on the ventral side, ovately elongated, subacute at the apex, about 1.5 mm wide below the middle, the other inner glumes or palea increasingly smaller and all hyaline; flowers apparently 2; fertile stamens 3, their filaments very fine and hyaline; anthers somewhat curved and a trifle wider toward the base, otherwise linear, 2 mm long, dark brown, subterete, well bifid at the base and less so at the apex, 0.5 mm wide; ovary obelongated, styles filamentous, stigmas long and feathery.

Type specimen number 10984, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, June, 1909.

Discovered in a hardpan ground among the cogon grass at 1500 feet altitude or along the upper limit of the true cogonal. The Bagobos call it "Girun." Named after *Datu Tongaling*, the Bagobo chief who has taken quite an interest in the collecting work and who has given me material assistance in my exploration.

Apparently nearest to *Rottboellia ophiuroides Benth.* Number 2617 of *Mr. Williams* from the same general region is the same species. Number 11317 of my own distribution from Dumaguete (Cuernos Mts.), Negros is also identical although it was years ago sent out under *Rottboellia ophiuroides Benth.*

Protecting glume always shorter than the internode or articulations, symmetric and apex not membranously margined nor with a constricted apex, not at all striate nor ridged or prominently punctate to pectinately ciliate and at the base transversely constricted not rugulose. Internodal rachis or articulations terete except the flowering notch, straight, conspicuously longitudinally striate and dark or dull brown when dry.

GUTTIFERAE

1p ✓

Calophyllum flavo-cortica Elm. n. sp.

A middle sized tree; stem 6 dm thick, 12 m high, subterete, crooked, chiefly branched toward the top; wood moderately hard or soft, white on the outside, reddish tinged or nearly roseus toward the center, odorless and quite tasteless; bark nearly 2 cm thick, scaling in thin yellowish plates, otherwise testaceus, with a yellowish green juice; main branches widely spreading and crookedly rebranched; twigs descending and with suberect tips, 1 cm thick, smaller and wrinkled on the dry specimens, in the early state somewhat covered with fine furfuraceous scales which upon falling leaving the flavus yellow bark exposed. Leaves opposite, horizontal or descending, coriaceous, conduplicate, much paler or yellowish green beneath, the short and abrupt tips recurved, base obtuse or more tapering than at the rounded apical portion, oblong or elliptically so, entire margins reflexed or involute in the dry leaves, marginal sides irregularly wavy especially toward the apex, the average ones 2.5 dm long by 8.5 cm wide at the middle, glabrous, lighter brown beneath when dry; petiole 1.25 cm long, 4 to 5 mm wide across the flattened upper side, glabrous though pulverulous, blackish on the dry specimens; midrib in the fresh state yellow beneath, stout and brown to blackish beneath, similarly colored above and grooved; lateral nerves divaricate, parallel, straight, more evident beneath, very numerous and close together; bud bract 2.5 cm long, acuminately pointed from the base, nearly maroon brown when dry. Flowers not seen. Infrutescence 3 to 15 cm long; spikes stout, glabrous, pale green, solitary or 2 to 3-clustered, usually unbranched; pedicels 1 to 1.5 cm long, opposite, divaricate, similar in color and vestiture, with a callous enlarged ring at the distal end; fruit marble-like, much wrinkled in the dry state, 2 to 2.5 cm in diameter, glaucous green, with a single large seed.

Type specimen number 14311, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, September, 1912.

Collected in more or less stony humus covered ground in a deep wooded depression at 3500 feet altitude between Duros and Cawilanan peaks. The Manobos call it "Bitaog."

Bureau of Forestry number 12620 or the type of *Calophyllum racemosum Merr.* has not the bright yellow twigs and lacks other minor characters.

Calophyllum lancifolia Elm. n. sp.

A slender upright tree; stem 1.5 dm thick, 10 m high, with its main branches arising from the middle; wood not hard, whitish, slightly bitter to taste, the heartwood avellaneus; bark yellowish, lenticelled, the middle portion reddish, with some latex; branchlets lax and numerous, divaricate or the ultimate ones drooping, green and glabrous except the cinnamon brown pubescence on the terminal young portion, turning brown when dry. Leaves opposite, well scattered along the branchlets, more shining and darker green on the upper side, horizontal, subcoriaceous, lanceolate, occasionally subfalcate and inequilateral, curing grayish brown on both sides, glabrous, slenderly tapering toward the acuminate apex, slenderly cuneate toward the base, entire margins subinvolute in the cured leaves, their sides strongly rugose, varying in size from 14 cm long by 2.5 cm wide a trifle below the middle to 5 cm long by 7 mm wide, the older and larger ones usually toward the base of the branchlets; midrib yellow when fresh, straw brown when dry, prominent beneath and in the early state covered with furfuraceous scale-like deciduous hairs; lateral nerves very numerous and contiguous; petiole 5 to 15 mm long, fuligineus, ultimately glabrous, the upper lateral edges curved over and forming a tube; bud bract densely fuligineus, 5 to 7 mm long, acuminately pointed. Inflorescence creamy white even in the bud state, in axillary fascicles, 1.5 to 3 cm long, glabrate; stalks usually 3, curing blackish brown, the lateral ones unbranched, the middle or larger one branched from the middle; pedicel of mature flowers glabrous, more or less angular, strict, slender, 9 to 12 mm long; buds 3 in a cluster, subtended by bracts; bracts coriaceous, 4 to 5 mm long by 3 mm wide, brown when dry, tawny pubescent or puberulent on the outside, broadly elliptic, deep spoon shaped, caducous; petals 4, of 2 oppositely inserted pairs, 4 to 6 mm long, oblong, widely spreading and twisting in anthesis, creamy white when fresh, glabrous, entire edges more or less rolled upon the ventral surface, rounded or subtruncate at the apex, the outer pair usually a trifle smaller, somewhat cuneate at the base, minutely nerved; stamens many, snugly curving around the ovary and inserted at its base; filaments unequal in length, dark reddish brown when dry, glabrous, filiform, contiguous at the base, falling with the ovary, 2 mm long or less; anthers linear, basifixed, nearly as long as the filaments, apex blunt; ovary light brown, also glabrous, ovoidly ellipsoid, 2 mm long; style as long as the ovary, glabrous; stigma lighter brown when dry, minutely 3-lobulate. Infrutescence lengthening up to 5 cm, the spikes green though brown on the dry material; fruit marble-like, ater colored, subpendant from the distally enlarged pedicels, nearly 2 cm in diameter.

Type specimen numbers 13266 in flower and 13989 in fruit, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July and October respectively, 1912.

The bud or flowering material was discovered on a dry forested ridge at 1000 feet altitude and was named "Bitaog" by the Manobos. The other or fruiting specimens were collected at twice the altitude and was called "Bitaogan" by the same natives.

54 **Calophyllum mindanaense Elm.** n. sp.

Large forest tree; trunk 15 to 20 m high, 6 to 9 dm thick, straight, its main branches arising from near the middle; branches spreading, freely rebranched ultimately, the twigs glabrous and usually angular in the dry state; bark smooth, yellowish, with latex; wood hard, burly, the outer one half whitish, the central portion brownish red, without odor or taste. Leaves opposite or subopposite, scattered, coriaceous, glabrous, curing subavellaneus, spreading or descending, dark green on the shallow conduplicate upper surface, yellowish green beneath, the entire margins subinvolute, acute at the apex, acute or subcuneate at the base, narrowly oblong, the larger blades 8 cm long, 3 cm wide at the middle; midrib bold beneath, caniculate on the upper side, glabrous; lateral nerves indefinite, rather clearly marked on both surfaces, divaricate; petiole also glabrous, 1 cm long, prominently grooved on the upper side; bud bract acuminate, nearly 1 cm long, obscurely angular, reddish brown puberulent. Inflorescence terminal, suberect, sparsely paniculately branched, less than 1 dm long, glabrous at least when old; flowers fragrant, deciduous, oppositely scattered; pedicels 1.25 cm long, rather slender; sepals 4, yellowish white, 1 cm long, scarcely wider than 5 mm below the middle, ovately oblong or subelliptic, rather sharply pointed, the sides toward the apex rolled in upon the upper surface, base quite broad, numerously veined; buds globose, 5 to 7.5 mm in diameter; petals cremeus, also glabrous, equal in number, similar in venation, obovately oblong, occasional one or two are much smaller and oblanceolate, thinner than the sepals, usually a trifle longer than the calyx; stamens very numerous, nearly free or only at the base united into groups below the ovary; filaments whitish, interlaced, filiform, glabrous, 4 to 6 mm long; anthers deep yellow, oblong, 1.5 mm long, attached to the emarginate base, 0.75 mm wide; ovary globose, green, 3.5 mm in diameter, bearing at the apex a mucronate point composed of the short whitish style and stigma; fruits globose, olive green, 2 cm thick.

Type specimen numbers 10597^{a} for flower and 11749 for fruit, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao. May and September respectively, 1909.

Collected in dense humid forests at 3750 feet elevation. The flowering material along the trail leading to mount Calelan, the fruiting and less typical specimens from the south of the

Baruring river. The one the Bagobos called "Vitaog" the other "Bitanog."

This is not the same as the following new species.

Calophyllum zschokkei Elm. n. sp.

A medium sized tree; trunk 3 dm thick, 10 m high, chiefly branched from the middle; wood hard, odorless and tasteless, reddish especially toward the center; bark comparatively thick, smooth, latericius beneath the yellowish gray mottled epidermis; twigs rather short and forming more or less dense masses toward the ends of the main branches, the terminal portion glabrous and dull green. Leaves ascending or horizontal, rigidly chartaceous, nearly flat, glabrous, deep green above, much lighter so beneath, curing avellaneus on both sides, the entire edge slightly curved upon the under side, obtuse at both ends, oblong, oppositely scattered, nearly 1 dm long and 4 cm wide at the middle, often much smaller and relatively broader; midrib raised beneath; lateral nerves very fine and numerous, equally perceptible from both sides; petiole glabrous, very stout, 5 mm long, flattened and furrowed along the upper side; bud bract acuminate and angular, 1 cm long, cinereous, usually with a small nodule on each side at the base. Inflorescence terminal or from the uppermost leaf axils, subpaniculately branched; peduncle proper less than 1 cm long, stout, fuligineus puberulent, occasionally longer and once branched from the middle; flowers slightly fragrant, arranged in whorls; pedicel glabrous, slender, at least 1 cm long when in the globose bud state, subtended by a 3 mm long glabrous acute bract; calyx glabrous, creamy white, the 2 basal ones ovately oblong, nearly 7.5 mm long, 5 mm wide at the base, tips acute and very finely ciliate or entire; the 2 inner ones larger, obovately oblong, all veiny; stamens indefinite, attached below the ovary, nearly free or falsely united into groups toward the base, filaments subequal, crinkled and intermixed, glabrous, cremeus, 4 mm long, gradually thickened toward the distal end; anther nearly 2 mm long, 0.75 mm wide, minutely emarginate at the apex, attached in the basal notch, oblong, the connective darker brown in the dry state; ovary glabrous and green, rugulose when dry, globosely ellipsoid, 3 mm long, bearing a 1 mm long style; fruit dull purplish blue, marble shaped, 1.25 cm in diameter, upon much thickened pedicels.

Type specimen numbers 12129 for flower and 12293 for fruit, *A. D. E. Elmer*, Magallanes (Mt. Giting-giting), Island of Sibuyan, March and April respectively, 1910.

This species was commonly noticed along the wooded banks of the Pauala' river at 1000 feet altitude. Named with pleasure after *Mr. Theodore C. Zschokke*, formerly a forester of the Philippine service.

Not *Calophyllum whitfordii Merr.* because our leaves are more elongated, apex obtusely rounded, with thicker petioles, much finer nerves; pedicels slenderer, entirely glabrous, the anthers of the larger flowers larger; and fruits apparently thicker and entirely globose.

HERNANDIACEAE

106 **Illigera diptera Elm.** n. sp.

Scandent and sprawling; stem 3 cm thick, rebranched oward the top; wood very soft and porous, with radial lines, whitish, odorless, a trifle sweet to taste; bark blackish brown, smooth or nearly so, green beneath the epidermis, dark green and glabrous on the slender branches. Leaves alternatingly scattered, trifoliate; petiole frequently inclined to twine, 7 to 12 cm long, terete, swollen and somewhat curved or twisted at both ends, glabrate; petiolule 1.5 to 3 cm long, also stout and somewhat enlarged at both ends; leaflets elliptic or ovately so, varying from 1 to 2 dm long, 7 to 10 cm broad, apex broadly obtuse, base broadly rounded, glabrous, rigidly coriaceous, entire, brown on both sides when dry, brightly shining on the upper much deeper green surface, conduplicate and tips strongly recurved; midrib prominent beneath; lateral nerves 4 to 6 on each side, divaricate and ascendingly curved, tips reticulately united, cross bars few and reticulations coarse. Flowers not seen. Infrutescence terminating the stem and branches, paniculately elongated, often 1 m long though frequently shorter, drooping; branches alternating, green, branching in a zigzag manner from below the middle or from near the thickened base, subolivaceus short tomentose especially on the younger portion, very flexible and usually compressed and fluted; fruits hanging, green, easily falling with 2 prominent nearly glabrous wings which are frequently curved or twisted, the larger ones 1 dm wide from the obtusely rounded or merely rounded tip tot ip, 4 cm high, oblong in shape from the side view and obscurely striate, margins entire or obscurely irregular at the ends of the wings; the seed portion narrowly oblong, with a thick puberulent rib-like vein on each side and which extends clear across the fruit from the base to the apex.

Type specimen number 13362, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, July, 1912.

Discovered upon a medium sized tree with other climbing and twinning vines on a forested ridge or knoll called Giwantanan at 2000 feet heigth. "Balogo" is the native or Manobo name.

At once distinguished from *Illigera platyandra Dunn* by the mere ridges on the sides instead of secondary wings.

HIPPOCRATEACEAE

Hippocratea lawsonii Elm. n. sp.

A wood climber; stem subterete, flexible, branched at irregular intervals; wood soft, doughy white, tough, odorless and tasteless, with a small brown pith; bark dull brown, checked into small squares or rectangular plates; twigs glabrous, subangular, nodulose and usually looped at the base, hanging. Leaves opposite, glabrous, rigidly coriaceous, descending, the rather abruptly acute tips recurved, nearly flat, dull deep green above, paler so beneath, drying greenish brown, margins subinvolute, entire or minutely toothed toward the apex, base obtusely rounded, oblong, 15 cm long by one third as wide or much smaller, lucid especially on the upper surface; midrib conspicuous and ridged beneath; the lateral nerves much less prominent, ascending, from 5 to 7 on each side, reticulately united, nearly as evident from the upper side, the reticulations numerous and quite conspicuous from the nether side; petiole stout, 1 cm long, shallowly grooved along the upper side. Infrutescence terminal, upon stout green 1.5 cm long peduncles, also glabrous; fruits 3, much compressed, truncately rounded or bluntly dentate at the apex, base broadly obtuse, quite veiny in the dry state, 3.5 cm wide toward the apex, obovate in outline, hard, flat, green, 5 cm long, rosettely spreading, more or less descending, dry, 1-celled, ultimately splitting through the middle, the 2 halves of the carpels fall off while the 4-winged seeds still remain intact; seeds irregularly compressed, elongated, blackish brown, 2 cm long; their wings dry and brown, elliptic, about as long but only 1.5 cm wide, the dorsal edge costate.

Type specimen number 12241, *A. D. E. Elmer*, Magallanes (Mt. Giting-giting), Island of Sibuyan, April, 1910.

Discovered this curiously fruited plant in moist rocky soil of densely wooded banks along the Dulangan creek at 750 feet altitude. Dedicated to *M. A. Lawson* who wrote the entire group of *Celastrineae* for the Flora of British India.

Fruits of *Hippocratea cumingii Laws.* not known nor are the flowers of our present new species known. The leaves of the two species are similar but the branching of the infrutescence on our material is entirely different from the branching of the inflorescence of *Dr. Lawson's* species.

ICACINACEAE

608 **Stemonurus agusanensis Elm. n. sp.**

An upright small tree; stem 3 dm thick, 8 m high, subterete but straight, branched from below the middle; wood soft, dingy or yellowish white, odorless and entirely tasteless, with conspicuous whitish radial lines; bark rather thin and smooth, yellowish brown, testaceus otherwise; main branches divaricate, rather long and crookedly rebranched; twigs green, slender, flexible, short pubescent, subolivaceus in the dry state. Leaves horizontal or descending, flat, the abruptly acuminate apex recurved, membranous, glabrous on the upper surface, much paler green and puberulent beneath, the 2 sides curing very unequal in color, the entire margins subinvolute in the dry state, obtusely rounded at the base, oblong to subelliptic, occasionally ovately or even obovately oblong, the average lamina are 16 cm long by 6.5 cm across the widest portion; midrib prominent and subolivaceus tomentose beneath, minutely grooved above; lateral nerves strict, ascending, 5 to 7 on each side, similar in vestiture though less prominent, usually with 2 pairs arising from near the base, tips obscure and more or less united, cross reticulations few and very faint; petiole 1 cm long at least, subolivaceus tomentose, impressed along the upper side. Infrutescence along the branchlets, in small divaricate clusters; stalks dark green, yellowish gray when dry, puberulent, flexible, 2 to 3 cm long, few branched from below the middle; pedicel ranging from 1 to 5 mm long, recurved; fruit elongated, ellipsoid, 1.25 to 2 cm long, 7.5 mm thick at the middle, hard, salmon colored, smooth though obscurely ridged when dry, bearing a large terminal stigma upon a short and usually curved neck, 1-seeded, subtended by the calyx vestige.

Type specimen number, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, October, 1912.

Discovered in wet gravelly ground near the water's edge of a streamlet in solidly shaded forests at 750 feet above ocean level. The native or Manobo name is "Lambuan."

Stemonurus apoensis Elm. n. sp.

A middle sized tree; trunk 15 to 20 m high, 4.5 dm thick, straight and round; branches chiefly toward the top, rather congested and forming a somewhat elongated crown; twigs numerous, quite lax and slender, at first pulverulent, soon glabrate; wood soft, sappy white, stringy, odorless and tasteless. Leaves coriaceous, light green, somewhat paler beneath, conduplicate on the upper side, smooth and glabrous on both sides when old, recurved toward the acute point, base roundly obtuse, the entire margins minutely involute in the dry state, alternatingly scattered along the branchlets, oblong, 10 cm long, 4 cm wide at the middle, occasionally much smaller, curing brown on both sides; midrib conspicuous beneath, caniculate above, in the early state puberulent; lateral nerves 5 to 7 pairs, much ascending and rather straight, tips reticulately united, reticulations or cross bars few and obscure; petiole less than 1 cm long, fluted along the upper side, short pubescent. Inflorescence chiefly axillary, suberect, averaging 3 cm long, paniculately branched from near the middle, all finely or cinereously pubescent; branches usually subtended by similarly hairy bracts, freely rebranched; pedicels very short or nearly obsolete, also cinereous, subtended by bracteoles; calyx green, thick, sessile, articulated, cup shaped, glabrous, scarcely longer than 2 mm, 3.5 mm wide across the apex; corolla tubular, yellowish green, quite rigid, 5 mm long, glabrous; segments only falsely united, oblanceolately oblong or broadly linear, 5, obtuse at the apex, with 2 parallel veins from the base to the apex, some are a trifle narrower than others; stamens nearly as long, recurved toward the apex, pale white; filaments flattened except at the base, glabrous on the back and below the middle, on the ventral side above the middle provided with tack shaped glands; anthers of the same color, introrse, the 2 basal lobes hanging down over the inner side of the filament or connective, ellipsoid, 1 mm long, laterally dehiscent; ovary ovately ellipsoid, 2 mm long, 1.5 mm across below the middle, short and abruptly pointed at the apex, glabrous, very obscurely ridged, yellowish, with a dark brown stigma; young fruits erect, dark green, 5-ridged at the apex, otherwise subglobose in outline.

Type specimen number 10658, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, May, 1909.

On steep wooded flanks along the Sibulan river at 3000 feet altitude. "Marumay" is the Bagobo name.

To be compared with *Urandra luzonensis Merr.*

10

Stemonurus flavicarpus Elm. n. sp.

Shrub-like or a slender tree; stem 4 to 6 m high, 8 to 10 cm thick, branched from below the middle; wood soft, sappy white, without taste or odor; bark smooth, mostly brown; branches divaricate, laxly rebranched, slender, numerous, terete, the young tips subolivaceus puberulent. Leaves thinly coriaceous, horizontal, alternatingly spreading along the branches, flat or the abruptly acute apex recurved, dull green on the faintly puberulent nether side, entire, base obtusely rounded, curing unequally brown on its 2 sides, the average leaves 12.5 cm long, 5 cm wide a trifle above the middle, obovately oblong or merely oblongish; midrib prominent beneath and brown puberulent, the 6 lateral pairs ascendingly curved, their tips usually united 5 mm from the leaf edge, similarly hairy, cross bars and reticulations very coarse yet quite evident from beneath; petiole less than 1 cm long, furrowed along the upper side, usually short hairy. Inflorescence subpendulous, axillary or from the fallen leaf axils; peduncle 5 mm long, densely yellowish brown hairy, few branched toward the top; branchlets very short, subtended by bracteoles, similarly pubescent, bearing few odorless flowers; pedicel 1 to 3 mm long, short pubescent, subtended by similar pubescent bracts, occasionally with an additional bract or two along its side; calyx apparently articulate, 1 mm high, nearly twice as broad across the faintly 4 or 5-apiculate apex, puberulent on the outside; corolla cremeus, 5 mm long, the basal two thirds united, the 4 segments obtuse and abruptly constricted into a 1 mm long incurved laciniate point, glabrous, each portion with a conspicuous midvein; stamens 4, exceeding the corolla; filaments subpetaloid, falsely united below the middle and inserted upon the corolla, 6 to 7 mm long, nearly 1.5 mm wide above the middle, oblanceolate, crisply hairy on the ventral side of the middle region, otherwise glabrous, thickened toward the obtuse apex, of the same color; anther light yellow, 1 mm long, truncately ellipsoid, upon the ventral side of the connective; ovary elongated, glabrous, 1 mm long, obtusely pointed, with a minute sessile stigma, brown in the dry state. Fruits upon 1.25 cm long green and glabrate pedicels, suberect, 1.5 cm long, elongated, ellipsoid or fusiform, hard, lemon yellow, glabrous and lucid, brown and striately ridged when dry, with a solitary stone seed.

Type specimen numbers 11330 for flower and 10527 for fruit, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, August and May respectively, 1909.

Both of these numbers were collected in rich soil thickly overlaid with forest humus at 4000 feet altitude. The flowering specimen was called "Mata-mate", the fruiting ones "Maram-may" by the Bagobos.

My number 7192 from Palo, Leyte I now consider *Stemonurus cumingianus Meirs.* and which is not the same as our present species. Neither can I agree that *Williams'* number 2582 from this same region is exactly like mine.

JUGHLANDACEAE

Engelhardtia apoensis Elm. n. sp.

A tall forest tree; trunk over 1 m thick, 20 m high or higher, its main branches arising above the middle and widely spreading; branchlets horizontally spreading, flexible, the tips usually ascending, the young portion latericius puberulent, soon glabrous; wood soft, white at least on the outside, odorless and tasteless; bark gray and smooth on the branches, longitudinally checked and yellowish brown on the trunk, reddish beneath the epidermis. Leaves ample, horizontally spreading or usually recurved, 1 to 2 dm long, alternatingly grouped toward the ends of the twigs, usually the lower ones smaller, 3 or 4-pinnate, oddly pinnate; petiole proper 5 cm long, more or less curved, striately grooved on the upper flattened side, latericius puberulent or pulverulent, the rachis even more densely so covered, quite slender; leaflets subopposite or alternate, descendingly recurved at the straight or slightly falcate acuminate apex, base broadly rounded and folded upon the upper much deeper green and glabrous surface, minutely glandular and subglabrate beneath except the latericius pubescent nerves, the whole blade has a slightly inequilateral appearance, the upper one half terminates 1 to 3 mm before the lower side, the margin usually finely serrate, otherwise entire and subinvolute in the dry state, varying from 3 to 8 cm long and average 2.5 cm wide toward the base, curing blackish brown on the upper side, dull sulphureus beneath; midvein curved, reddish brown pulverulent above and puberulent beneath, quite bold; lateral nerves 9 to 13 pairs, ascendingly curved, similar in vestiture, less prominent beneath, tips reticulately united, reticulations rather faint; petiolule 3 mm long, reddish pulverulent, all equal. Spikes alternatingly arranged, usually arising from beneath the foliage, strongly recurved, as long as the leaves, subterete, similar in pubescence, persistent; fruits green, ovoidly elongated, 7.5 mm long, 5 to 6 mm thick, densely covered with soft fulvus hairs, 3-winged; lateral wings 3 cm long, 6 mm wide, parchment-like, with a strong midvein and lateral nerves, obtuse at the apex; the middle wing erect not divaricate, 6 cm long by 1 cm wide, midribs also pulverulent; besides these the fruit usually bears 3 additional bract-like wings or appendages opposite the large ones, the middle one of these bracts is longer and narrower; the slender 2-forked stigma is usually present.

Type specimen number 11744, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, September, 1909.

Discovered in moist deep rich soil of a densely forested ridge at 3750 feet altitude along the southern side of the Baruring river. My Bagobo companion called it "Lupisan."

LABIATAE

Coleus apoensis Elm. n. sp.

Branched biennial to perennial herbs; stems 1 to nearly 2 m high, at the base reclining and taking roots from the lower joints; branches arising from the middle or below it, erect or suberect, roundly angular, green, short dirty pubescent, the longer ones rebranched, blackish brown in the dry state; roots profuse. Leaves horizontally spreading, conduplicate on the upper green side especially so toward the base, ovately triangular in shape, the basal side truncate at and the base short pointed or decurrent down to the petiole, lateral side rounded, margins irregularly crenate or rugose, the larger divisions again indented, only the truncate base entire, well scattered and opposite, very variable, coriaceous and becoming detached while drying, the lower or larger lamina 6 mm long and wide across the base, usually with foliaceous bracts in their axils, dull brown on both sides when dry, glistening soft tomentose above, less so beneath; midrib straight, with 2 pairs of lateral nerves arising from the base and 3 extra pairs farther up, all the lateral pairs ascending except the lower basal pair which is divaricate, all numerously reticulated toward the distal ends, other reticulations also numerous and well raised beneath; petiole 1.5 to 3 cm long, slender, yellowish hairy. Inflorescence erect, few paniculately branched, terminal, 1 to 2 dm long, usually 3-stalked from the same place but often with a single stalk from the upper leaf axils, the larger ones branched from below the middle, the ultimate ones unbranched and as long; all stalks subolivaceus pubescent, square, longitudinally fluted, green and reddish tinged along the upper side, curing dull brown; flowers grouped in opposite clusters, divaricate, aromatic as well as the foliage, light blue; pedicels divaricate, clustered in whorls, 2 mm long, finely pubescent, relatively thick; calyx campanulate, 2.5 mm long, the basal two thirds united, rounded at the base, similarly pubescent on the outside; the lower 4 teeth 1 mm long at least and sharply pointed, the upper tooth or the fifth one very broad and with 3 veins; corolla 6 to 7 mm long, delicate in texture, crooked at about the middle or a trifle below it and tubular below this, the tube glabrous, 1.25 mm thick and hyaline toward the base, bilipped from near the middle; upper lip almost straight, 3 mm long, broadly elliptic, margins not ciliate; lower lip at right angle, a trifle shorter, deeply notched at the apex thereby forming 2 orbicularly obovate lobes, the basal portion broad and folded along the upper or ventral side, lobes hyaline and ciliately margined; stamens apparently 4, inserted at the throat of the upper lip, ascending and more or less enclosed by the lobe; filaments slender, glabrous, 1.5 mm long, curved toward the distal ends; anthers versatile, oblong, 0.5 mm long, obscurely compressed and somewhat curved, ventrally dehiscent; style very slender and glabrous, equalling the corolla, extending along the inner side of the upper one half of the corolla, terminated by 2 flattened linear recurved stigmatic lobes; ovary likewise glabrous, 4 or 5-lobulate, small, sessile.

Type specimen number 11301, *A. D. E. Elmer*, Todaya

(Mt. Apo), District of Davao, Mindanao, September, 1909.

Associated with grasses of thickets in fertile soil along an open ridge at 3000 feet altitude. "Calalapo-bulan" is the compound Bagobo name.

It may not belong to the genus *Coleus* at all.

113 **Coleus integrifolius Elm.** n. sp.

A suffrutescent perennial; old stem 2.5 cm thick, terete, 2 mm high, branched from near the base; the woody tissues green as is also the large pith; bark yellowish, with numerous and large brown lenticels; branches angular, suberect or reclining, the green twigs atropurpureus spotted, glabrous. Leaves opposite, exceedingly variable, descending, submembranous, paler green beneath, glabrous, thin, all dull brown on both sides, the larger blades 17 cm long and one half as wide below the middle, the upper or terminal ones much reduced and even bract-like, gradually tapering into a sharp acuminate usually subfalcate apex, base rounded to subtruncate or the larger lamina short and broad cuneate, ovate, entire around the base and along the apex, otherwise obscurely dentate or cuneate or even subentire, minutely black punctate beneath; petiole varying from 3 to 9 cm long, glabrous, dark brown when dry, slender, flattened, striate and with light brown lenticels along the upper side; midrib deep dull brown, plane on both sides, rather broad beneath toward the base; lateral nerves 5 to 7 on each side, much ascending and curved, cross bars fine yet quite evident from beneath. Spikes terminal, solitary or more, suberect, flower bearing from the middle, usually with one or more pairs of foliaceous bracts toward the base, subangular and fluted on 2 sides; flowers divaricate, in small opposite clusters, pale blue or cyaneus, odorless, the subpendant corollas easily falling; stalks 5 to 8 mm long including the pedicels, few branched from near the base, angular or striate, brown puberulent, ultimately glabrous, persistent; old pedicels 4 mm long, straight, glabrous; calyx divaricate, chartaceous in the dry or old state, the basal 2 mm united and cup shaped, glabrous, strongly veined and nerved, black punctate; the lower lip straight, 3.5 mm long, sharply bidentate at the apex; the upper lip recurved, short ovately oblong, 3 mm long and fully as wide across the base, apex entire and obtuse; lateral ones 2, obovate, 2 mm long and almost as broad above the middle; young corolla pipe-like, puberulent and black, glandular, 1.25 cm long when expanded, the basal 3 mm tubular and 1 mm thick, the expanded portion subdeflexed; the basal one half of the inflated portion 3 mm thick, gradually expanding toward the suboblique throat, strongly constricted at about the middle; upper one half broadly truncate and with few blunt obscure teeth, erect, 3 mm long by 2 mm wide; lower one half straight though ventrally folded, ovate when spread out, more membranous, 7 mm long by as many mm wide below the middle; stamens 1.5 mm long or a little less, 4, the basal two thirds adnate to the lower side of the corolla, the upper one third divided into linear ascendingly curved glabrous filaments, 2 of which are slightly shorter than the other 2; anthers elliptic from the side view, 0.5 mm long, versatile; style a trifle longer than the stamens, slender, glabrous, terminated by a small capitate stigma, the basal two thirds included within the filamentous tube. Seeds 2, lenticular, brown, at least 1 mm across, smooth or only minutely punctate.

Type specimen number 13627, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Collected in talus beds at the base of deeply shaded precipitous banks of the Catangan creek at 2000 feet altitude. My Manobo companion called it "Harinayan."

114

Coleus scutellarioides Elm. n. sp.

Succulent and suberect herbs; stem reclining from the base, ultimately ascending or suberect, 1.25 cm thick, much thinner on the dry specimens, only sparingly branched, from 3 to 9 dm long or high, young tips when dry brown puberulent, older portion glabrous, dark green when fresh and conspicuously spotted or sprinkled with lividus, quadrangularly ridged and expanded between the joints, usually curved; roots profuse and fibrous, arising from the joints of the lower portion of the stem, horizontally spreading over the humus covered ground. Leaves deep green above, lividus beneath, membranous, spreading, curing unequally brown on its 2 sides, glabrous except the brown puberulent veins on both sides, the lower surface minutely black punctate under a lens, subelliptic or ovately elongated, base broadly cuneate or subrounded in the larger lamina, apex sharply acute to acuminate, entire toward the base, otherwise crenately toothed or subentire, the average lamina 1 dm long by one half as wide across the middle, the apical ones smaller and turning purplish while drying; midrib deep brown when dry, puberulent, rather conspicuous beneath toward the base; lateral nerves 5 to 6 pairs, divaricate from the base and ascendingly curved, similar in color though less prominent, cross bars and reticulations obscure; petiole striate and brown pulverulent when dry, 2 to 5 cm in length. ascending, lividus spotted. Inflorescence erect, usually terminal, occasionally lateral, the angular stalks greenish white and sprinkled with lividus, about 5 to 8 cm long, subtended by reduced leaves, few branched from the middle or below it; bracts lilacinus especially the margins, rather broad, caducous, glabrous, brown when dry; flowers alternate, odorless, whitish corollas easily falling; pedicels ebracteolate, few mm long, flattened; fruiting calyx at most 1 cm long by 4 mm thick, glabrous, membranous, the basal one half united and cup shaped, erect; upper segment 3.5 mm long and almost as broad across the base, ovate, veined; the lateral pair of acuminate segments 2 to 3 mm long and attached to the lower lip which in turn is terminated by an equally sized and similarly shaped pair of teeth, all veined as the upper lip; corolla glabrous, very thin, 1.5 cm long, the basal one third tubular, the middle portion funnel shaped, the segmented portion divaricately spreading; the upper lip 3.5 mm long and nearly as broad across the base, entire, ovate, obtuse at the apex and with a callous tip; lower lip longer and broader, truncate and notched at the apex, the basal portion usually with a pair of lateral lobules or folds; stamens 1.25 cm long, 4; filaments united into a glabrous tube, only the apical one fourth free and ascendingly curved, 2 of the 3 filamentous portions a trifle longer than the remaining 2; anther elliptic though truncately rounded and at the apex pointed, versatile, 0.5 mm long; style as long as the stamens, also glabrous, slender, somewhat flattened above the middle though finely pointed at the apex; stigma terminal, very minute; ovule 4-lobed, glabrous.

Type specimen number 13614, *A. D. E. Elmer*, Cabadbaran (Mt. Urdaneta), Province of Agusan, Mindanao, August, 1912.

Observed in one or two places and then only in damp deeply humus covered fertile soil of densely shaded forested gullies at 3500 feet elevation between Duros and Cawilanan peaks. "Nabioda" in Manobo.

Strongly resembling certain species of *Scutellaria.*

Coleus sparsiflorus Elm. n. sp.

Chiefly biennial herbs; stems branched below the middle, decumbent or reclining toward the base and taking roots from the lower joints, crooked, 3 to 4 dm high, angular or striate, glabrate or puberulent, reddish or greenish and purplish spotted; branches erect or ascending, similar in vestiture and color, both drying nearly black, likewise rebranched; roots profuse, long and fibrous. Leaves diverse in size, opposite, lateral as well as terminal, scattered, soft membranous, flat, acute at the apex, base obtuse or acute, ovately oblong or subelliptic, entire below the middle, margins above this with shallow crenate teeth or subentire, curing nearly equally brown on both sides, glabrous, velvety green on the upper surface when fresh, reddish or purplish tinged beneath even so in the younger dry leaves, the average blades 5 cm long by one half as wide across the middle or a trifle below it, frequently smaller and occasionally larger; petiole varying from 1 to 2.5 cm long, slender, finely puberulent, when dry nearly black; midrib faint, curing darker brown; lateral nerves 3 to 5 pairs, relatively obscure, ascendingly curved, tips anastomosing, with secondary intervening ones from the midrib, reticulations very faint. Inflorescence erect, reddish or purplish, 3 cm long, from the uppermost leaf axils; peduncles commonly 3 from the same place, the middle one a trifle longer, glabrous and black when dry, bearing few flowers above the middle; bracts purplish, opposite, early and easily falling, ascending, 1 cm long, convex and deeply folded on the inner side toward the base, slightly inequilateral, slenderly tapering to the acuminate point; midvein prominent, the lateral nerves faint, minutely yellowish punctate, puberulent along the margin and around the dorsal side, with a few deep yellow glandular buds in their axils; flowers 1 to 3-clustered; pedicel 4 to 6 mm long, glabrous but with few glands; calyx purple, 4 mm long, turbinate, 2-lipped or irregularly 5-toothed, deep yellow glandular especially the upper obtusely rounded lobe, the lower 2 teeth narrow and sharply pointed, the lateral segments merely dentate and only one half as long; corolla deciduous, thinly membranous, bent at right angles 5 mm from the base and divaricate, 2 cm long including the upper or longest segment, gradually widening from the tubular base along the lower side up to about two thirds the length of the corolla or at the oblique throat of the lower lip, whitish and tinged with purple; upper lip 8 mm long, broadly lanceolate, nearly straight, 2.5 mm wide below the middle, apex entire; lower lip 7 to 8 mm wide across the throat, compressed, terminated by 3 teeth, the latter ones dentate, the broad middle one emarginate at the apex thereby froming 2 rounded lobules; stamens 4, inserted at the throat of the upper lip; filaments compressed, 4 to 6 mm long, likewise glabrous, unequal in size; anthers versatile, subrotund, 0.75 mm long; style similar to the filaments, equalling the longest corolla segment; ovary glabrous and more or less 4-lobed.

Type specimen number 11646, *A. D. E. Elmer*, Todaya (Mt. Apo), District of Davao, Mindanao, September, 1912.

Discovered in fertile moist and deeply humus covered ground of small open places of dense forests at 4000 feet elevation. Its Bagobo name is "Manangidtausa."

ERRATA

P. 2321, l. 15 from bottom for furfurascent read furfuraceous

P. 2323, l. 9 from top for **laeviramolusa** read **laeviramulosa**

P. 2351, l. 11 from top for **Eugenia** read **Eucalyptus**

P. 2356, l. 18 from bottom for Standford write Stanford

P. 2379, l. 16 from top for steakes write stakes

P. 2381, l. 21 from bottom for valotile read volatile

P. 2389, l. 9 from bottom for subalbida-ramea read subalbido-ramea

P. 2395, l. 12 from top for *Elm.* read *Blm.*

P. 2405, l. 15 from top for **areneta** read **arenata**

P. 2422, l. 6 from bottom for **pachyrhiza** read **pachyrrhiza**

P. 2426, l. 7 from bottom for **hewettiae** read **hewittiae**

P. 2429, l. 10 from bottom for interisting write interesting

P. 2449, l. 8 from bottom instead of **ochracea** var. read var. **ochracea**

P. 2458, l. 9 from top for **Pyllachora** read **Phyllachora**

P. 2458, l. 11 from top for *Milletia* write *Millettia*

P. 2476, l. 7 from top for **acchariferae** read **Sacchariferae**

P. 2476, l. 11 from bottom for **asphaeria** read **Metasphaeria**

P. 2512, l. 3 from bottom for **braeviseta** read **breviseta**

P. 2512, l. 16 from top for *uhitfordi* write *whitfordii*

P. 2546, l. 13 from top for "District of Mindanao" read "District of Davao, Mindanao"

P, 2547, l. 21 from top for tickets read thickets

P. 2569, l. 15 from bottom for **villosiflora** read **villosiflorum**

P. 2579, l. 7 from bottom for *propincuum* read *propinquum*

P. 2585, l. 17 from bottom insert is between it and district

P. 2588 follow with page 2589

P. 2597, l. 11 from bottom for Giting-ginting read Giting-giting

P. 2603 at the bottom add the following new paragraph. Called "Pararan" by the Bagobos.

P. 2620 l. 1 from bottom for stat write state

P. 2625 follow with page 2626

P. 2644 for **Clochidion** write **Glochidion**
P. 2656, l. 10 from top for Discoverd write Discovered
P. 2656, l. 12 from bottom for ike write like
P. 2661, transpose headline to read "March 27, 1915]"
P. 2688, l. 18 from top for twinning write twining
P. 2690, l. 17 from bottom insert number 14018.

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